

Eraspes pectoralis new species

Depth  $2\frac{1}{3}$ ; head  $2\frac{7}{8}$ , width  $2\frac{1}{8}$ .  
 Snout  $2\frac{4}{8}$  in head from snout tip; eye  $3\frac{1}{5}$ ,  $1\frac{1}{5}$  in snout,  $1\frac{1}{5}$  in interorbital; orbit 3, equals snout; maxillary reaches  $\frac{8}{8}$  in eye, expansion 2, length  $2\frac{1}{3}$  in head from snout tip; teeth uniserial in jaws, absent from palate and tongue; interorbital 3, convexly elevated, with median ridge extending to dorsal. Gill rakers  $4 + 13$ , lanceolate, equal gill filaments, which  $1\frac{3}{5}$  in eye.

Scales  $52 + 36$  in lateral line, straight section  $1\frac{1}{8}$  in low arch; 20 above arch to soft dorsal origin, 70 below. Breast and chest naked to pectoral base and behind ventral base. Fins not scaly, only scaly sheaths at bases of soft



dorsal and anal. Caudal base  
scaly. Very few scales on cheek,  
only few close to infraorbitals  
and about postocular. Snout  
depth  $3\frac{3}{4}$  in eye.

D. VIII - I, 24, I, second spine  $6\frac{1}{4}$   
in total head, first branched ray  
 $2\frac{1}{10}$ ; A. II - I, 20, I, first branched  
ray  $2\frac{1}{2}$ ; least depth of caudal  
peduncle  $6\frac{1}{2}$ ; caudal  $1\frac{1}{5}$ ?, forked;  
ventral  $2\frac{3}{4}$ , reaches  $1\frac{4}{5}$  to anal;  
pectoral  $2\frac{4}{5}$  in fish without caudal,  
rays II, 21, reaches  $\frac{1}{2}$  in straight  
section of lateral line.

Gray above, silvery white below,  
fins brownish. Irides pale. Mouth  
largely black, roof and tongue  
white.

U. S. N. M., no.  
Albatross Collection (M. 6328). Length  
215 mm. Type.



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Uraspis uraspis (Günther)

Caranx uraspis Günther, Cat. Fish.  
Brit. Mus., vol. 2, p. 444, 1860 (on  
Bleeker). — Fowler, Mem. Bishop  
Mus., vol. 10, p. 148, 1928 (compiled).

Caranx (Uraspis) uraspis Weber and  
Beaufort, Fish. Indo Austral. Archip.,  
vol. 6, p. 260, 1931 (nias).  
Wakaya, Ann. Carnegie Mus., vol.  
15, p. 206, pl. 31, fig. 1, 1924 (Nagasaki;  
Ryuboku).



soiled or brownish.

India, Ceylon, Pinang, Cochin  
China, China. Known by the pale  
band containing lateral line its entire  
course, obtuse snout and uniform  
villiform mandibular teeth.

2 examples. A. N. S. P. Bombay.

Bombay Natural History Society. Length  
150 to 230 mm.

52862 and 52863 A. N. S. P. Hong Kong.

Henry W. Fowler. Length 171 to 230 mm.



Uraspis carangoides (not  
Leioglossus carangoides Bleeker  
1855) Bleeker, Nat. Tijds. Ned.  
Indie, vol. 8, p. 418, 1855 (type  
locality, Amboina).



circuli very fine.

D. XI, 26, I to 27, I, third spine 2 in head, first ray  $2\frac{7}{8}$  to  $3\frac{4}{5}$ ; A. II, 6, I or 7, I, second spine  $3\frac{3}{5}$  to  $3\frac{7}{8}$ , second ray  $2\frac{1}{4}$  to  $2\frac{2}{3}$ ; caudal  $1\frac{1}{2}$  to  $1\frac{4}{5}$ , obliquely convex behind, with lower median ray longest; least depth of caudal peduncle  $3\frac{1}{2}$  to  $3\frac{4}{5}$ ; pectoral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ ; ventral  $1\frac{3}{4}$  to  $1\frac{4}{5}$ .

Back drab gray, with deep soiled appearance, under surface white. Iris pale or yellowish white. Lateral line embraced with pale median streak or narrow band its whole length. Spinous dorsal slate gray to blackish terminally. Soft dorsal and caudal brownish, other fins pale,



Uraspis reversa (Jordan),  
Evermann, Wakiya } Jordan,  
Evermann, Tanaka, Proc. Cal.  
Acad. Sci., ser. 4, vol. 16, p. 658,  
pl. 22, fig. 1, November 14, 1927  
(type locality, Honolulu).



Depth  $3\frac{2}{5}$  to  $4\frac{1}{2}$ ; head  $3\frac{1}{4}$  to  $3\frac{1}{2}$ ,  
width  $1\frac{1}{2}$  to  $1\frac{3}{5}$ . Snout  $3\frac{2}{5}$  to  $3\frac{3}{5}$  in  
head; eye  $4\frac{1}{4}$  to  $5\frac{1}{4}$ ,  $1\frac{2}{5}$  to  $1\frac{1}{2}$  in snout,  
 $1\frac{1}{3}$  to  $1\frac{2}{5}$  in interorbital; maxillary  
reaches  $\frac{3}{5}$  in eye <sup>length</sup>,  $2\frac{4}{5}$  to 3 in head;  
5 pores on chin; teeth in jaws in villiform  
bands, only upper outer row enlarged;  
interorbital  $3\frac{1}{2}$ , broadly convex; preopercle  
edge membranous. Gill rakers 4 + 9,  
short, low tubercles.

Scales 50 or 51 along above lateral line  
to caudal base; tubular scales 45 or 46  
to caudal base and 4 or 5 more on latter;  
6 or 7 scales above, 10 below, 25 to 30  
predorsal. Scales with 8 to 12 basal  
radiating striae; 0 to 22 apical denticles,  
with 8 transverse series of basal elements;



1641

Depth 2; head  $2\frac{2}{3}$  to  $2\frac{3}{4}$ , width  $2\frac{1}{8}$  to  $2\frac{1}{5}$ . Snout  $3\frac{1}{4}$  to  $3\frac{1}{2}$  in head from snout tip; eye 3 to  $3\frac{1}{4}$ , greater than snout,  $1\frac{1}{5}$  in inter-orbital; maxillary reaches  $\frac{1}{4}$  to  $\frac{2}{5}$  in eye, expansion 2 to  $2\frac{1}{4}$  in eye, length 2 to  $2\frac{1}{10}$  in head from snout tip; teeth little curved, moderate, uniserial in jaws, none on palate; interorbital 3, convexly elevated, with median keel to dorsal origin. Gill rakers  $3 + 14$ , lanceolate,  $1\frac{3}{5}$  in eye; gill filaments  $\frac{4}{5}$  of gill rakers.

Scales 48 to 50 + 25 in lateral line, straight section  $1\frac{1}{5}$  to  $1\frac{1}{2}$  in arch, which <sup>scute depth  $4\frac{2}{3}$  in eye</sup> low. Keels of scutes of lateral line with spine of each bent or directed forward. Fins little scaly, except basal sheath on soft dorsal and



anal anteriorly. Breast and chest naked, Parea extended but slightly upward each side. Scales 26 above arch of lateral line to soft dorsal origin, 40 below.

D. I, VIII, I, 25, I, third erect spine  $4\frac{1}{4}$  to  $4\frac{2}{3}$  in total head length, first branched ray  $1\frac{3}{5}$ ; A. II - I, 20, I or I, 21, I, first branched ray  $1\frac{4}{5}$  to  $1\frac{5}{6}$ ; caudal  $1\frac{1}{10}$  to  $1\frac{1}{6}$ , deeply forked, slender lobes sharply pointed; least depth of caudal peduncle  $5\frac{4}{5}$  to 6; pectoral 1, rays II, 20; ventral I, 5, fin  $1\frac{2}{5}$  to  $1\frac{3}{5}$  in total head.

Back drab, sides and below silvery white to gray white. Nine transverse broad drab



bands, little wider than pale interspaces and not reflected on vertical fins. No dark opercular blotch. Iris whitish. Spinous dorsal dark brown. Vertical fins pale to whitish basally, terminally dark brown. Pectoral pale brown, little darker basally. Ventral pale basally, darker to blackish terminally. Roof of mouth and tongue cream white, rest of mouth inside blackish. Lips pale or whitish.

East Indies, Philippines, Riu Kiu, Japan, Hawaii.



The two examples listed below are surely the present species, but differ in the ventral which comparatively long, reach well beyond the vent in one example and in the other but slightly so. They seem to agree with Caranx (Uraspis) uraspis of Weber and Beaufort's account of an example 172 mm long from Kias, though they do not describe the character of the spines of the scutes on the tail. They describe the color as "greenish above, silvery below, crossed by 6 dark vertical bands continued on dorsal and anal." They also mention "ventrals long, equal to head and extending on anal." They greatly resemble Wakaya's figure of a specimen 172 mm long without



1645  
the caudal fin, though in neither  
of my examples does the ventral  
reach the origin of the soft  
anal.



8180. Manila market.  
June 12, 1908. Length 108 mm.

A 1001. Locality not given.  
Length 108 mm.



Scales with 4 or 5 basal radiating striae; 106 to 108 apical denticles, with 8 to 11 transverse series of basal elements; circuli fine.

D. VIII — I, 8, I, third spine  $1\frac{3}{5}$  in head, first branched ray 3 to  $3\frac{1}{8}$ ; A. II, 6, I, first branched ray 3 to  $3\frac{1}{5}$ ; caudal  $1\frac{1}{4}$  to  $1\frac{2}{5}$ , deeply forked, with sharp pointed lobes; least depth of caudal peduncle  $3\frac{2}{5}$  to  $3\frac{2}{3}$ ; pectoral  $1\frac{2}{5}$ ; ventral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ .

Back light brown, below paler with yellowish cast. Iris brown. Fins all pale brown, dorsals, ventrals, anals and caudal with yellowish tinge, especially terminally, without any traces of bands on soft dorsal and anal.

Hawaiian Islands. In my "Fishes of Oceania" I united this species with Upeneus taeniatus Kner, but that species



Body elongate, compressed. Head pointed. Eye rather large, little advanced in head. Maxillary reaches below eye. Lower jaw slightly projects and upper jaw well protractile in horizontal tube. No upper teeth, uniserial and minute in lower jaw and more or less rudimentary on tongue. No teeth on palate. Front part of lateral line scarcely arched, becomes straight below tenth dorsal ray, with 25 to 30 small scutes in straight section. Front dorsal and anal rays but slightly elevated. Caudal forked. Pectoral moderate, ventral small.

One species.



1647

Genus Selaroides Bleeker

Selaroides Bleeker, Nat. Tijds.  
Ned. Indie, vol. 1, pp. 343, 352,  
1850. (Type Caranx leptolepis  
Cuvier, monotypic.)

Leptaspis Bleeker, Verh. Batavia.  
Genoot. (Maakreeel.), vol. 24, pp. 30,  
71, 1852. (Type Caranx leptolepis  
Cuvier, monotypic.)



1420

terminally, pale basally, membranes  
darkest on spinous fin. Other fins  
pale.

Inekran, India, Ceylon, Malacca,  
Siam, East Indies, Philippines,  
Tonkin, China, Queensland. Quite  
likely Otolithus orientalis Seale <sup>is this species.</sup>  
It is said to have 12 lower gill rakers.  
The type was 235 mm. long.

5024, 5027, Catbalogan, Samar.  
April 15, 1908. Length 203 to 218 mm.

56117 U.S.N.M. Bacon. Bureau  
of Fisheries (3441). Length 230 mm.

72685 U.S.N.M. Java. Bryant and  
Palmer. Length 100 mm.

72686 U.S.N.M. Java. Bryant and  
Palmer. Length 238 to 255 mm. 2 examples.



Selaroides leptolepis (Cuvier)

Caranx leptolepis (Kuhl and Van Hasselt) Cuvier, Hist. Nat. Poiss.,  
vol. 9, p. 63, 1833 (type locality,

Java).



~~limited~~  
Red Sea, Arabia, Natal, Mauritius,  
Réunion, Rodriguez, Madagascar,  
Ceylon, Cocos Keeling, Andamans,  
Pinang, East Indies, Philippines,  
China, Riu Kiu, Japan, Australia,  
Micronesia, Melanesia, Polynesia,  
Hawaii. Known by its red or rose  
color with a yellow lateral band,  
usually a valued market fish.



— Bleeker, Nat. Geneesk. Arch.  
Ned. Indie, vol. 2, p. 517, 1845 (Java);  
Journ. Indian Archip., vol. 3, p. (69) 72,  
1849 (Macassar).

— Cantor, Journ. Asiatic Soc. Bengal,  
vol. 18, pt. 2, p. 1108, 1849 (1850)  
(Pinang Sea; Singapore).

— Günther, Cat. Fish. Brit. Mus., vol. 2,  
p. 440, 1860 (Malay Peninsula; Australia).

— Day, Fishes of India, pt. 2, p. 225, pl.  
51, fig. 4, 1876 (Madras). — Martens,  
Preuss. Exped. Ost Asien, vol. 1, p. 391,  
1876 (Singapore).

— Károli, Termesz. Füzetek, Budapest,  
vol. 5, p. 160, 1881 (Canton; Macao).



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Amia cyanoxoma (Bleeker)

Apogon cyanoxoma Bleeker, Nat. Tijds.  
ned. Indië, vol. 5, 1853, p. 71. Lawajing,  
Solor Island. — Günther, Cat. Fishes  
Brit. Mus., vol. 1, 1859, p. 242 (copied).  
— Playfair, Fishes of Zanzibar, 1866,  
p. 20 (Zanzibar). — Klunzinger, Verh.  
zool. bot. Gesell. Wien, vol. 20, 1870, p.  
714 (Koseir, Red Sea).

Apogon (Amia) cyanoxoma Klunzinger,  
Fische Roth. Meer., 1884, p. 20 (Koseir).

Amia cyanoxoma Bleeker, Atlas Ichth.  
Ind. Néerl., vol. 7, 1873-76, p. 87 (Solor);  
vol. 8, 1876-77, pl. (76) 354, fig. 2.

Amia magnifica Seale, Philippine Journ.  
Sci., vol. 4, no. 6, 1909, p. 507. Balabac  
Island.



1657.

— Macleay, Proc. Linn. Soc. New South Wales,  
vol. 5, p. 534, 1881 (Australia). — Sauvage,  
Bull. Soc. Philomath. Paris, ser. 7, vol.  
5, p. 106, 1881 (Swatow).

— Boulenger, Proc. Zool. Soc. London, p.  
240, 1889.

— Day, Fauna British India, <sup>Fishes</sup>, vol. 2,  
p. 167, 1889.

— Elera, Cat. Fauna Filipinas, vol. 1, p. 510,  
1895 (Luzon; Manila).

— Jordan and Richardson, Bull. Bur. Fisher.,  
vol. 27, p. 250, 1907 (1908) (Cavite).

— Bean and Weed, Proc. Acad. Nat.  
Sci. Phila. U. S. Nat. Mus., vol. 42, p.  
599, 1912 (Batavia). — Weber, Siboga  
Exped., vol. 57, p. 397, Fische, 1913 (Makassar).

— McCulloch, Biol. Res. Endeavour,  
vol. 3, pt. 3, p. 129, pl. 21, April 21, 1915  
(Queensland). — Fowler, Copeia, no. 58, p. 63,  
June 18, 1918 (Philippines).



243  
2 examples. Danawan and Vi Amil  
Islands, vicinity of Darvel Bay, Borneo,  
Dutch East Indies. September 27, 1909.

Length 40 to 44 mm.

8 examples. Basa Reef, Gulf of Boni,  
Celebes. December 17, 1909. Length 22 to 39  
mm.

1 example. Great Tobea Island.  
December 15, 1909. Length 52 mm.



— McCulloch, Mem. Queensland Mus.,  
vol. 8, pt. 1, p. 72, fig. 5, Jan. 30, 1924  
(type of Caranx cheverti), fig. 6 (type  
of Caranx procaranx).

— McCulloch, Austral. Mus. Mem.,  
no. 5, pt. 2, p. 188, Sep. 10, 1929 (reference).



242  
eye not extending to opercle, - on  
which black or dusky median  
blotch. Chin and lower jaw slaty.  
Spinous dorsal membranes hyaline  
olive, spines silvery anteriorly. Soft  
dorsal and anal slightly dusky,  
latter with somewhat pinkish shade.  
Caudal pale, with few small olive  
spots in membranes, and black blotch  
at caudal base chiefly above lateral  
line. Paired fins hyaline pink, very  
pale.

~~Samuel. Bada Reef, Gulf of Benue,~~  
~~Algeria. December 17, 1909. Length 2 1/2 to~~  
~~3 1/2 inches~~



— Fowler, Mem. Bishop Mus., vol.  
11, no. 6, p. 405, 1934 (note).

Caranx (Selaroides) leptolepis  
Waksija, Ann. Carnegie Mus., vol. 15,  
p. 208, pl. 31, fig. 2, 1924 (Ryukyu;  
Formosa). — Weber and Beaufort,  
Fishes Indo Austral. Archip., vol.  
6, p. 262, fig. 40, 1931 (Flores; Macassar).



1114

caudal  $1\frac{1}{4}$ , cuneate; least depth of caudal peduncle  $3\frac{2}{5}$ ; pectoral  $1\frac{1}{2}$ ; ventral  $1\frac{3}{5}$ .

Uniform silvery, with more or less distinct narrow black lines following scale rows above lateral line.

Tips of dorsal and caudal, also pectoral axil, dusky. Length 300 mm. (Seale.)

India, Pinang, East Indies. Otolithus versicolor is based on Russell's plate, which shows the advanced position of the anal fin, its origin falling before the middle of the soft dorsal base. This is next figured by Bleeker as his Otolithus lateoides and finally by Seale as Otolithus doloratus. According to Bleeker the scales are 100 rows along above and 90 along below the lateral line, with 11 rows transverse above.



Selaroides leptolepis Bleeker,  
Nat. Tijds. Ned. Indie, vol. 3, p.  
741, 1852 (Boeloekomba); vol. 7,  
p. 226, 1854 (Macassar); vol. 8,  
p. 437, 1855 (Bonthaian, Celebes).

— Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 86, (1934) p. 150,  
(Bangkok); vol. 87, p. 141, 1935  
(Bangkok; Sriracha).



Exped. Ost Asien, 1876, p. 390 (Gedde;  
Bangkok).  $\frac{1}{m}$  Bleeker, Verhandel. Kon.  
Akad. Wetensch. Amsterdam, no. 3, vol.  
14, 1874, p. 9 (Sumatra, Nias, Pinang,  
Singapore, Banka, Java, Madura,  
Borneo, Celebes).  $\frac{1}{m}$  Martens, Preuss.  
Exped. Ost Asien, 1876, p. 390 (Gedde;  
Bangkok).  $\frac{1}{m}$  Day, Fishes of India, pt. 2,  
1876, p. 197, pl. 45, fig. 3.  $\frac{1}{m}$  Bleeker,  
Atlas Ichth. Ind. Néerl., vol. 9, 1877, p.  
(2) 185, fig. 5.  $\frac{1}{m}$  Jordan and Eigenmann,  
Rep. U. S. Fish Comm., pt. 14, 1886 (1887),  
p. 346 (Hong Kong).  $\frac{1}{m}$  Day, Fishes Brit.  
India, Fishes, vol. 2, 1887, p. 129.  $\frac{1}{m}$   
Elera, Cat. Fauna Filipinas, 1895, p.  
503 (Luzon; Cavite).  $\frac{1}{m}$  Duncker, Mitteil.  
naturh. Mus. Hamburg, vol. 21, 1903  
(1904), p. 154 (Jeram; Kuala Lumpur).  
 $\frac{1}{m}$  Fowler, Journ. Acad. Nat. Sci. Phila-  
delphia, series 2, vol. 12, 1904, p. 530



Leptaspis leptolepis Bleeker,  
Verh. Batavia Genoot. (Makreel),  
vol. 24, p. 71, 1852 (Batavia; Macassar).  
— Oshima, Philippine Journ. Sci.,  
vol. 26, no. 3, p. 387, March 1925 (copied).

Carangus leptolepis Jordan and  
Evermann, Proc. U. S. Nat. Mus., vol.  
25, p. 337, 1902 (Keelun, Formosa).



1418

Depth  $3\frac{2}{3}$  to  $4\frac{1}{5}$ ; head 3 to  $3\frac{1}{8}$ , width 2 to  $2\frac{3}{5}$ . Snout  $3\frac{3}{5}$  to  $4\frac{2}{5}$  in head from snout tip; eye  $4\frac{3}{5}$  to  $6\frac{3}{5}$ ,  $1\frac{1}{8}$  to  $1\frac{7}{8}$  in snout, 1 to  $1\frac{2}{3}$  in interorbital; maxillary reaches  $\frac{1}{2}$  to  $\frac{3}{4}$  in eye, expansion  $1\frac{2}{5}$  to  $1\frac{3}{4}$  in eye, length  $2\frac{1}{3}$  to  $2\frac{2}{5}$  in head from snout tip; single series of uniformly small conic teeth in each jaw; pair of upper long front canines, sometimes one or both double, single median or symphyseal lower one; interorbital  $3\frac{7}{8}$  to 5, broadly convex. Gill rakers 5 + 8, lanceolate,  $1\frac{2}{5}$  in gill filaments which  $1\frac{1}{4}$  in eye.

Scales 63 to 66 along close above lateral line to caudal base; tubular scales 48 to 51 in lateral line to caudal base and 15 to 18 more out over fin medially; 7 or 8 scales above, 7 or



Gnathanodon leptolepis Fowler,  
Proc. Acad. Nat. Sci. Philadelphia,  
vol. 79, 1927, p. 271 (Orion;  
Philippines); Mem. Bishop Mus.,  
vol. 10, p. 150, 1928 (compiled); vol.  
11, no. 5, p. 326, 1931 (reference).



new 129

1915

Otolithes argenteus Cuvier

~~Otolithes argenteus (Kuhl and Van Hasselt) Cuvier, Hist. nat. Poiss., vol. 5, 1830, p. 67. Batavia, Malabar, Malacca.~~

~~$\frac{1}{2}$  Richardson, Ichth. China Japan, 1846, p. 225 (Canton).  $\frac{1}{2}$  Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, 1849, p. 1043 (sea and estuaries of Pinang, Malayan Peninsula, Singapore).  $\frac{1}{2}$  Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 310 (China; Ceylon); Proc. Zool. Soc. London, 1861, p. 222 ("hepal").  $\frac{1}{2}$  Day, Fishes of Malabar, 1865, p. 58.  $\frac{1}{2}$  Kner, Reise Novara, Fische, 1865, p. 135, pl. 6, fig. 4 (air bladder) (Japan).  $\frac{1}{2}$  Bleeker, Nederland. Tijdschr. Dierk., vol. 2, 1865, p. 56 (Amoy).  $\frac{1}{2}$  Playfair, Fishes of Zanzibar, 1866, p. 53 (Aden; mouth Pangani River, East Africa); Proc. Zool. Soc. London, 1868, p. 10 (Madagascar). ~~Martens, Pissina.~~~~



Caranx cheverti Alleyne and Macleay,  
Proc. Linn. Soc. New South Wales,  
vol. 1, p. 324, pl. 10, fig. 1, 1877  
(type locality, Katow, New Guinea).

Caranx procaranx De Vis, Proc. Linn.  
Soc. New South Wales, vol. 9, pt. 3,  
p. 540, Nov. 29, 1884 (type locality,  
Cape York, Queensland).

Caranx bidii Day, Proc. Zool. Soc.  
London, 1873, p. 237 (type locality,



Depth  $5\frac{1}{4}$ ; head  $3\frac{3}{4}$ . Snout  $4\frac{2}{5}$  in head from snout tip; eye  $6\frac{2}{5}$  ( $5\frac{7}{8}$  on figure); maxillary reaches  $\frac{2}{5}$  in eye, expansion  $1\frac{1}{4}$  in eye, length  $2\frac{7}{8}$  in head from snout tip; mandible projects; jaws with small, sharp teeth in 2 or more rows, outer row slightly enlarged and about 4 enlarged curved canines anteriorly in each jaw; interorbital 5, low; preopercle edge rough or uneven. Lower gill rakers 14, strong, equal pupil.

Scales 54 in lateral line, 11 above, 11 below.

D. XI, 25, second spine  $1\frac{7}{8}$  in total head length, first ray  $2\frac{3}{5}$ ; A. II, 7, second spine slender,  $\frac{3}{5}$  in total head, fourth ray  $1\frac{9}{10}$ , fin origin shown opposite base of eighth dorsal ray;



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Depth  $2\frac{2}{3}$  to  $3\frac{1}{4}$ ; head  $3\frac{1}{4}$  to  $3\frac{3}{5}$ , width 2 to  $2\frac{1}{8}$ . Snout  $3\frac{1}{8}$  to  $3\frac{1}{3}$  in head from snout tip; eye  $3\frac{1}{5}$  to  $3\frac{3}{5}$ ,  $1\frac{1}{10}$  to  $1\frac{1}{8}$  in snout, subequal with interorbital, broad adipose lids cover  $\frac{2}{5}$  of eye; maxillary reaches  $\frac{1}{8}$  to  $\frac{1}{4}$  in eye, expansion  $1\frac{7}{8}$  to 2, length  $2\frac{1}{3}$  to  $2\frac{2}{5}$  in head; interorbital  $3\frac{3}{4}$  to 4, convexly elevated. Gill rakers  $10 + 32$ , lanceolate, subequal with gill filaments, which  $1\frac{2}{5}$  in eye.

Scales 50 to 52 + 35 to 40 in lateral line, straight section  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in arch, scute depth 3 to 4 in eye. Breast scaled.

D. VIII, I, 24, I or 25, I, third spine 2 to  $2\frac{1}{5}$  in total head length, first branched ray  $2\frac{2}{5}$



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to  $2\frac{1}{2}$  in total head length;  $\text{A. II} - \text{I}, 21, \text{I}$  or  $\text{I}, 22, \text{I}$ , second spine  $3\frac{2}{3}$  to  $4\frac{1}{2}$ , first branched ray  $2\frac{2}{5}$  to  $3\frac{1}{8}$ ; caudal  $1\frac{1}{8}$  to  $1\frac{1}{5}$ , forked; least depth of caudal peduncle  $5\frac{7}{8}$  to 7; ventral 2 to  $2\frac{1}{3}$ ; pectoral  $3\frac{1}{4}$  to  $3\frac{3}{4}$  in fish without caudal, rays  $\text{II}, 19$ .

Gray brown above, below silvery white. Iris silvery. Gray black shoulder spot, slight portion on upper hind opercular edge, whole not large as eye. Fins pale, soft dorsal and caudal with minute dusky dots. Ventral and anal more or less whitish.

Arabia, India, Ceylon, Malaya, East Indies, <sup>Siam</sup> Tonkin, China, Formosa, Philippines, Rui Kiu, Queensland.



U. S. N. M., no. 30624. New Guinea.  
Australian Museum. Length 115 mm.

U. S. N. M., no. 30631. New Guinea.  
Australian Museum. Length 109 mm.

U. S. N. M., no. 56024. Philippines.  
Bureau of Fisheries (3981). Length  
333 mm. As Carangus affinis.

U. S. N. M., no. 72598. Batavia Bay,  
Java. O. Bryant and W. Palmer. J.  
April 2, 1909. Length 228 mm.

A. N. S. P., one example. Philippines.  
Commercial Museum of Philadelphia.

A. N. S. P., four examples. Philippines.  
1923. Rev. Joseph Clement. Purchased.

A. N. S. P., one example. Orion.  
1923. Rev. Joseph Clement. Purchased.



27633 A.N.S.P. Padang, Sumatra. <sup>144200</sup>

A.C. Harrison and H.L. Miller. Length

138 mm. Color when fresh in arrack  
pale brown, whitish below. On back  
pale brown lines follow in courses of  
scales obliquely to dorsal profile, though  
on caudal peduncle become horizontal.  
Vertical fins with dusky dots and  
olivaceous tints. Paired fins with  
dilute olivaceous.



Genus Gnathanodon Bleeker

Gnathanodon Bleeker, Verh.  
Batavia. Genoot. (Makreeel.),  
vol. 24, p. 72, 1852. (Type  
Scomber speciosus Forskål,  
monotypic.)

Hypocaranx Klunzinger, Fische  
Roth. Meer., p. 92, 1884. (Type  
Scomber speciosus Forskål,  
monotypic.)



1402

Sciaenoides bianchus Blyth, Journ.  
Asiatic Soc. Bengal, vol. 29, 1860, p. 139  
(Sitang River). <sup>1</sup>/<sub>2</sub> Bleeker, Atlas Ichth.  
Ind. Néerland., vol. 9, 1877, pl. (3) 386,  
fig. 3. <sup>1</sup>/<sub>2</sub> Day, Fishes of India, pt. 2, 1876,  
p. 194, pl. 47, fig. 1; Fauna British India,  
vol. 2, 1889, p. 125. <sup>1</sup>/<sub>2</sub> Seale, Philippine Journ.  
Sci., vol. 9, 1914, p. 69 (Hong Kong). <sup>1</sup>/<sub>2</sub> Tirant,  
Service Océanogr. Tech. Indo Chine, 1929,  
6<sup>e</sup> note & <sup>1929</sup> p. 169 (Cochin China).

Sciaena bianchus Seale, Philippine Journ.  
Sci., vol. 9, no. 1, 1914, p. 69 (Hong Kong).

Depth  $5\frac{3}{4}$ ; head  $3\frac{2}{5}$ , width 2. Snout  
5 in head from snout tip; eye  $7\frac{2}{5}$ ,  $1\frac{2}{5}$  in  
snout,  $1\frac{3}{4}$  in interorbital; maxillary  
reaches nearly  $\frac{1}{4}$  eye diameter beyond  
eye, expansion equals eye, length  $2\frac{1}{4}$   
in head from snout tip; 2 upper front  
canines and 2 lower laterals on each  
mandibular ramus; interorbital low;



Body oblong, compressed. Head large, rather deep, upper profile rather evenly convex. Snout moderate. Eye rather small, high, slightly advanced in head. Maxillary not reaching below eye, extended behind. Upper jaw strongly protractile in <sup>partly</sup> horizontal tube. Jaws even or lower slightly shorter. Teeth soon obsolete or absent. Tongue rough with minute denticulations. Lower gill rakers short. Scales small, minute on breast. Front part of lateral line moderately arched, hind part with 15 feeble scutes. Dorsal spines weak. Front dorsal and anal rays moderately elevated, not forming falcate lobes. Caudal forked, lobes



1664  
equal. Pectoral short in young,  
greater than head with age.  
Ventrols twice or more  
shorter than head.

One species.



8855 to 8857, 9107, 20452, 21192,  
21193 [541]. Catbalogan, Samar.  
April 15, 1908. Length 115 to 183 mm.  
Eighteen examples.

One example. Cebu market.  
August 28, 1909. Length 52 mm.

2643 [1142]. D. 5361. Corregidor  
Light, S.  $89^{\circ}$  W., 7.2 miles (lat.  
 $14^{\circ}24'15''$  N., long.  $120^{\circ}41'30''$  E.),  
Manila Bay. In 12 fathoms.  
February 8, 1909. Length 155 mm.

Seven examples. Iloilo market.  
May 31, 1908. Length 69 to 100 mm.

17291 and 17292. Labatan Point,  
Samar. July 24, 1909. Length 88 to  
90 mm.

11658. Kowloon, China. October 5,  
1908. Length 125 mm.

1000. Locality not given.  
Length 148 mm.



Comp 179

1443

Johnius ophiceps (Alcock)

Sciaena ophiceps Alcock, Journ. Asiatic Soc. Bengal, vol. 58, pt. 2, 1889, p. 300. Off Mahanaddi delta in 5 to 9 fathoms and off Godavari delta in 4 or 5 fathoms; vol. 65, pt. 2, 1896, p. 315 (Orissa coast).

Depth  $4\frac{1}{4}$  to  $4\frac{2}{3}$  in total; head  $3\frac{2}{3}$  to  $3\frac{7}{8}$ . Snout not overhanging mouth; eye  $5\frac{5}{8}$ ,  $1\frac{1}{2}$  in snout; maxillary reaches opposite hind eye edge; upper jaw overlaps lower, front canines project like fangs in closed mouth; snout with large pores and free bilobed skin flap with wide pocket like pore between lobes, each with similar pore; mouth oblique; teeth villiform, outer upper row sharp and curved of which front 4 canine like and inner row of distant lower sharp conic teeth; interorbital nearly flat, ~~squalid~~; preopercle edge finely serrate, some



1665

Gnathanodon speciosus (Forsk.)

Scomber speciosus Forsk.,  
Descript. Animal., p. 12, 1775  
(type locality, Arabia). —  
Bonnaterre, Tabl. Ichth., p. 143,  
1788 (Red Sea). — Gmelin, Syst. Nat.  
Linn., pt. 1, p. 1332, 1789 (Arabia).  
— Walbaum, Arted. Pisc., vol. 3,  
p. 217, 1792 (copied). — Schneider,  
Syst. Ichth. Bloch, p. 31, 1801  
(Red Sea). — Shaw, General  
Zool., vol. 4, p. 603, 1804 (copied).



Comp 129

1451

Otolithoides biauritus (Cantor)

Otolithus biauritus Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 1, 1847, p. 1039. Sea of Pinang, Malayan Peninsula, Singapore, Lencore, Tenasserim Provinces.

Otolithus biauritus Mason, Burmah Nat. Resources, 1860, p. 695. (misprint.)

Collichthys biauritus Günther, Cat. Fishes Brit. Mus., vol. 2, 1860, p. 315 (Sea of Pinang, Calcutta, Malayan Peninsula); Zool. Record, vol. 3, Pisces, 1866, p. 143. <sup>1</sup> Bleeker,

Verhandel. Kon. Akad. Wetensch. Amsterdam, series 3, vol. 14, 1874, p. 15 (Pinang, Singapore, Borneo). <sup>1</sup> Elera, Cat. Fauna Filipinas, vol. 1, 1895, p. 503 (Luzon; Manila).

Collichthys biaurita Seemacher, Mitteil. Naturh. Mus. Hamburg, vol. 21, 1903 (1904), p. 155 (Japan).



Caranx speciosus Lacépède, Hist.  
Nat. Poiss., vol. 3, pp. <sup>58</sup>72, pl. 1, fig. 1,  
1802 (Red Sea; Mauritius).

— Cuvier, Hist. Nat. Poiss., vol. 9,  
p. 130, 1833 (Suez; Massana; Trinquemale <sup>V</sup>  
Vanicolo).

— Bleeker, Nat. Geneesk. Arch.  
Ned. Indie, vol. 2, p. 517, 1845

(Batavia). — Richardson, Zool.  
Voy. Erebus and Terror, Ichth.,  
p. 136 <sup>pl. 58, figs. 4-5,</sup> 1848 (New Holland).

— Bleeker, Verh. Batavia. Genoot.  
(Madura), vol. 22, p. 4, 1849  
(Kammal); (Mid. Java), vol. 23,  
p. 8, 1850. — Cantor, Journ. Asiatic

Soc. Bengal, vol. 18, pt. 1, <sup>p. 115,</sup> 1849 (1850),  
(Pinang; Malay Peninsula; Singapore). — Jerdon,  
Madras Journ. Lit. Sci., 1851, p. 137.

— Peters, Archiv Naturg., pt. 1, p. 245, 1855 (Mozambique).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 444, 1860 (Madras; Philippines;  
Borneo; Sunda Sea; Pinang).



caudal peduncle 4; pectoral  $1\frac{2}{5}$ ;  
ventral  $1\frac{3}{4}$ , first ray ends in short  
filament.

Grayish green above, below silvery  
or yellowish silvery. Iris yellow,  
above brownish. Opercle with diffuse  
blue blotch above. Fins yellowish,  
verticals dusted gray brown. Length  
298 mm. (Bleeker.)

India, Malacca, East Indies, Cochin  
China, China.



(— Martens, Proc. Zool. Soc. London,  
vol. 1, p. 391, 1876 (Singapore).

— Day, Fishes of Malabar, p. 84,  
1865; Proc. Zool. Soc. London,

1865, p. 25 (Pochin, Malabar)  
Fishes of Zanzibar, p. 61, 1866 (Aden; Zanzibar);

Playfair, Proc. Zool. Soc. London,

1867, p. 860 (Seychelles). —

Günther, Trans. Zool. Soc. London,

vol. 6, p. 431, 1869 ( ).

— Day, Proc. Zool. Soc. London,

1870, p. 689 ( ).

Klunzinger, Verh. zool. bot. Ges.

Wien, vol. 21, 1871, p. 455 (Red Sea).

— Day, Fishes of India, pt. 2, p. 226, 1876. — Klunzinger;

Sitzb. Ber. Akad. Wiss. Wien,

math.-naturw. Kl., vol. 80, pt. 1,

p. 377, 1879 (1880) (Cleveland Bay).

— Macleay, Proc. Linn. Soc. New

South Wales, vol. 5, <sup>pt. 4,</sup> 1881, p. 535

(Torres Straits); vol. 7, 1882, p.

356 (New Guinea). — Boulenger,

Proc. Zool. Soc. London, 1887, p. 661.

(Muscat); 1889, p. 240.

— Day, Fishes of India, Suppl., p. 789, 1888; Fauna British  
India, Fishes, vol. 2, p. 168, 1889.



Depth 4 to 5; head  $3\frac{2}{5}$  to  $4\frac{4}{5}$ , width 2. Snout  $4\frac{3}{4}$  in head from snout tip; eye 5 to  $6\frac{7}{8}$ ,  $1\frac{1}{3}$  in snout,  $1\frac{1}{4}$  to  $1\frac{1}{2}$  in interorbital; maxillary reaches opposite hind eye edge, expansion little less than eye, length  $\frac{1}{2}$  to  $\frac{2}{5}$  in head; teeth in villiform bands in jaws, upper with larger outer row and lower with larger inner row but not as canines; interorbital moderately convex; preopercle edge denticulate.

Scales 95 along above lateral line, 85 along below; 12 above lateral line, 17 below.

D. IX, I, 34, I to 36, I, third spine  $2\frac{1}{5}$  in total head length, first ray  $5\frac{1}{5}$ , twenty-seventh ray  $2\frac{7}{8}$ ; A. II, 7, I or 8, I, second spine  $6\frac{2}{5}$ , second ray  $3\frac{1}{4}$ ; caudal  $1\frac{2}{5}$ , cuneate, with broad median point behind; least depth of



— Elera, Cat. Fauna Filipinas,  
vol. 1, p. 510, 1895 (Luzon; Manila  
Bay).

— Seale, Occas. Pap. Bishop Mus.,  
vol. 1, no. 5, pp. 16, 20, 1902  
(Honolulu). — Jenkins, Bull. U. S.  
Fish Comm., vol. 22, p. 447, 1902  
(1903) (Honolulu). — Snyder,  
Bull. U. S. Fish Comm., vol. 22,  
p. 525, 1902 (1904) (Honolulu).

— Jordan and Evermann, Bull.  
U. S. Fish Comm., vol. 23, pt. 1,  
p. 197, pl. 12, 1903 (1905) (Honolulu).

— Waite, Rec. Austral. Mus.,  
vol. 6, p. 71, 1905 (Fremantle).

— Jordan and Seale, Bull. Bur.  
Fisher., vol. 25, p. 232, 1905 (1906)  
(Pago Pago); vol. 26, p. 14, 1906 (1907)  
(Cavite).



<sup>cm 179</sup> Otolithoides microdon (Bleeker)

Otolithus microdon Bleeker, Naturk.

Tijdschr. Nederl. Indië, vol. 1, 1850, p. 99.

Batavia; Samarang; Surabaya.

Sciaena microdon Günther, Cat. Fishes

Brit. Mus., vol. 1, 1859, p. 294 (compiled).

<sup>1</sup>/<sub>m</sub> Luncker, Mitteil. Naturh. Mus.

Hamburg, vol. 21, 1903 (1904), p. 154

(Kuala Lumpur). <sup>1</sup>/<sub>m</sub> Lloyd, Records

Indian Mus., vol. 1907, p. 226 (Uluab).

Collichthys microdon Bleeker, Nederland.

Tijdschr. Dierk., vol. 4, 1874, p. 117 (China);

Verhandel. Kon. Akad. Wetensch. Amsterdam,

series 3, vol. 14, 1874, p. 16 (Sumatra,

Pinang, Singapore, Java, Madura, Borneo).

Sciaenoides microdon Day, Fishes of India,

pt. 2, 1876, p. 194, pl. 45, fig. 2 (Bombay; Orissa);

Fauna British India, vol. 2, 1889, p. 125.

→ <sup>1</sup>/<sub>m</sub> Tirant, Service Océanogr. Pêch. Indo Chine,

1929, note 6, p. 169 (Phuoc Hai; Cochin China).



(— Seale, Philippine Journ. Sci., vol. 5, p. 270, 1910.

— Evermann and Seale, Bull. Bur. Fisher., vol. 26, p. 64, 1906 (1907) (Bulan). — Seale and Bean, Proc. U. S. Nat. Mus., vol. 33, 1907, p. 241 (Zamboanga). —

Jordan and Richardson, Bull. Bur. Fisher., vol. 27, p. 14, 1907 (1908) (Cavite). — Regan, Ann. Natal Mus., vol. 1, pt. 3, p. 246, May 15, 1908 (Kosi Bay, Natal).

(Jordan and Richardson, Mem. Carnegie Mus., vol. 4, no. 4, p. 179, 1909 (Takao, Formosa). — Weber, Siboga Exped., vol. 57, Fische, p. 397, 1913 (Macassar; Saleyer).

— Ogilby, Mem. Queensland Mus., vol. 3, p. 67, pl. 21, 1915 (Moreton Bay; Warrmley Island; Townsville).

(Barnard, Ann. South African Mus., vol. 2, pt. 2, p. 548, det. 1924 (Zululand). — Whitley, Journ. Pac. Research Inst., vol. 3, no. 1, p. 12, January - March 1928 (Santa Cruz Islands). — McCulloch, Austral. Mus. Mem., no. 5, pt. 2, p. 185, Sep. 10, 1929 (reference).

(— Gilchrist and Thompson, Ann. Newbarn Mus., vol. 1, pt. 4, p. 388, May 21, 1917 (reference).



Canal 130

Otolithoides<sup>12</sup> new generic name

Type: Otolithus<sup>1</sup> biavritus Cantor.

Sciaenoides (not Richardson 1843) Blyth,  
Journ. Asiatic Soc. Bengal, vol. 29, January  
1860, p. 139. Type Otolithus biavritus  
Cantor, designated by Jordan and Eigenmann,  
Rep. U. S. Fish Comm., pt. 14, 1886 (1889), p.

347.  
Diagnosis: <sup>1</sup>m

differs from Collichthys in the firm bones  
of the head with extensive muciferous  
cavities. Its contour approaches Otolithus,  
from which it differs, however, in the  
less pronounced dentition, the teeth  
hardly canine like and some only slightly  
or inconspicuously enlarged.

Sciaenoides cochinchinensis Bleeker  
as credited to Bleeker by Tirant. I have  
<sup>13</sup>Service Océanogr. Tech. Indo Chine, <sup>6<sup>e</sup> note</sup> 1929,  
note 6, p. 169. Phuoc Hai.

not located.

Otolithus; είδος, appearance.



Caranx (Hypocaranx) speciosus  
Klunzinger, Fische Roth. Meer<sup>vol. 1,</sup>  
 p. 96, 1884 (note). —  
Steindachner, Denks. Akad. Wiss.  
Wien, math.-naturw. Kl., vol. 20,  
 p. 493, 1900 (1901) (Pearl Harbor,  
 Oahu).

Caranx (Gnathanodon) speciosus  
Wakiya, Ann. Carnegie Mus., vol. 15,  
 p. 209, pl. 31, fig. 3, 1924 (Formosa).  
 — Weber and Beaufort, Fishes  
Indo Austral. Archip., vol. 4, p.  
 264, fig. 50, 1931 (Flores; Macassar;  
 Saleyer).



show rows of yellowish or white spots arranged ventrally along the trunk and tail, like the photophores of scopelids. Similar spots also shown in other formaline specimens from which the scales have not fallen.

62376 U.S.N.M. Port Arthur. J. F. Abbott. Length 90 to 125 mm. 11 examples.

86076 U.S.N.M. Hankow, China. C. Ping. Length 130 mm.

86335 U.S.N.M. China. A. <sup>del.</sup> Sowerby. Length 181 mm.

86455 U.S.N.M. China. A. <sup>del.</sup> Sowerby. Length 148 to 165 mm. 4 examples.

{ 83997 U.S.N.M. Soo Chow. H. Gist Gee. Length 90 mm. Caudal  $2\frac{1}{4}$  in rest of body.

86663 U.S.N.M. China. C. Ping. Length 160 mm.

97063 U.S.N.M. Shanghai. A. <sup>del.</sup> Sowerby. Length 140 to 200 mm. 7 examples.



Gnathanodon speciosus Bleeker,  
 Nat. Tijds. Ned. Indie, vol. 1, 1851,  
 p. 160 (Banka); vol. 2, 1851, p. 471  
 (Rio); vol. 3, 1852, p. 236 (Ternate),  
 p. 445 (Banka), p. 740 (Macassar);  
 Verh. Batavia. Genoot. (makereel),  
 vol. 24, 1852, p. 72 (Batavia;  
 Samarang; Surabaja); ~~Amboina~~  
 (Bengal.), vol. 25, 1853, p. 46  
 (reference); Nat. Tijds. Ned. Indie,  
 vol. 4, 1853, p. 132 (Ternate); vol.  
 5, 1853, p. 234 (Ceram), p. 319  
 (Amboina); vol. 7, 1854, p. 227  
 (Macassar), p. 312 (Anjer); Verh.  
 Kon. Akad. Amsterdam, vol. 2, p.  
 10, 1855 (Tasmania); Nat. Tijds.  
 Ned. Indie, vol. 8, p. 344, 1855  
 (Sulizend Islands); vol. 10, p.  
 347, 1856 (Rio, Bintang); Act.



11114

37767 U.S.N.M. Korea. J.B.  
Bernadon. Length 42 to 68 mm.

2 examples

45299 U.S.N.M. Somewhere on the  
coast of Korea. P.L. Jouy. Length  
90 mm. Type Larumichthys rathbunae.  
Eye in description  $4\frac{1}{2}$ , on figure  $3\frac{3}{4}$ .  
Scales <sup>about</sup> 47 in description, figure shows  
65 notched scales in lateral line to  
caudal base. Soft dorsal rays 37 in  
description, 35 on figure.

52080 U.S.N.M. Shanghai, China.  
Length 117 mm. Type of Collichthys fragilis.

57777 U.S.N.M. Japan. P.L. Jouy.  
1 example 145 mm. ? in poor condition.  
As Collichthys fragilis.

62374 U.S.N.M. Port Arthur, Manchuria.  
J.F. Abbott. Length 70 to 120? mm. 7 examples.  
Evidently formaline specimens from  
which all scales have fallen. All



Soc. Sci. Ind. heerl., vol. 1, no. 3,  
p. 4, 1856 (Manado), p. 8 (Macassar);  
Nat. Tijds. Ned. Indie, vol. 13,  
p. 284, 1857 (Tjirutjup, Biliton);  
vol. 15, pp. 200, 223 (Goram);  
vol. 16, p. 317, 1859 (Tanara);  
Nat. Tijds. Ned. Indie, vol. 22,  
p. 65, 1860 (Benculen); Act.  
Soc. Sci. Ind. heerl. (Sumatra),  
vol. 8, p. 30, 1860 (Sumatra);  
(Sumatra 2), vol. 8, p. 2, 1860  
(Benculen); (Celebes), vol. 8, p.  
40, 1860 (Celebes); Nat. Tijds.  
Ned. Indie, vol. 22, p. 65, 1861  
(Benculen); Verslag. Kon. Akad.  
Wet. Amsterdam, vol. 12, p. 74,  
1861 (Pinang); Ned. Tijds.  
dierk., vol. 1, p. 235, 1863 (reference);  
vol. 2, pp. 171, 290, 1865 (reference);  
Verslag. Kon. Akad. Wet. Amsterdam,



Drab or light brownish, below whitish with faint silvery reflections. Iris gray. Dorsals and caudal dusted with dusky, other fins whitish.

China, Korea. Elera has also listed it from Luzon and Manila. Abundant in most maritime Chinese markets.

Larumichthys rathbunae seems to be a variant, badly preserved, in which the scales have left the head. The discrepancies in the counts of the soft dorsal and anal rays as given by various authors <sup>for the present species</sup> are apparently due in part to variation, probably more extensive than may be supposed, as well as to method and error in tabulation.



ser. 2, vol. 2, 1868, p. 293 (Rio,  
 Bintang), p. 300 (Waigiu); <sup>Reich.</sup> Faune  
 Madagascar, ~~Pollen et Van Dam~~,  
 Poiss., vol. 4, p. 99, 1874 (reference);  
 Verh. Akad. Wet. Amsterdam,  
 vol. 18, p. 18, 1879 (Mauritius).

— Jordan and Jordan, Mem. Carnegie  
 Mus., vol. 10, no. 1, p. 41, December  
 1922 (Honolulu).



149

Gill rakers  $11 + 20$ , lanceolate, equal gill filaments or  $1\frac{1}{4}$  in eye.

Scales 50 in lateral line to caudal base and 30 more in median row out over caudal fin; 66 close along above lateral line to caudal base; 6 or 7 above lateral line, 7 or 8 below, 30 or 31 predorsal, 8 across cheek; soft vertical fins all more or less scaly basally. Scales with 10 basal radiating striae; circuli moderate, even.

D. IX, 23, I to 30, I, third spine  $2\frac{1}{4}$  to  $2\frac{2}{5}$  in total head length, first ray  $2\frac{1}{4}$  to  $2\frac{3}{4}$ ; A. II, 10, I to II, 13, I, second spine  $3\frac{7}{8}$  to  $5\frac{1}{5}$ ; first ray  $1\frac{3}{4}$  to 2; caudal 1 to  $1\frac{1}{8}$ , ends in rather long median point behind; least depth of caudal peduncle  $4\frac{1}{3}$  to 5; pectoral  $1\frac{1}{10}$  to  $1\frac{1}{4}$ ; ventral  $1\frac{1}{2}$  to  $1\frac{3}{5}$ .



— Fowler, Bull. Bishop Mus., no. 22,  
 p. 25, 1925 (Honolulu); no. 38, p. 12,  
 1927 (Honolulu); Proc. Acad. Nat.  
 Sci. Philadelphia, vol. 79, 1927, p.  
 271 (Orion); Mem. Bishop Mus., vol.  
 10, p. 149, pl. 11 C, 1928 (Honolulu; Apia;  
 New Guinea; type of Caranx  
regularis); ~~Whitley, Journ. Pan Pac.~~  
~~Research Inst., vol. 3, no. 1, p. 12,~~  
~~January-March 1928 (Santa Cruz~~  
~~Islands).~~ — Fowler, vol. 11, no. 5,  
 p. 326, 1931 (reference). — Herre,  
 Journ. Pan Pac. Res. Inst., vol. 6, no.  
 4, p. 12, October-December 1931  
 (New Hebrides). — Fowler, Mem.  
 Bishop Mus., vol. 11, no. 6, p. 405, 1934  
 (Port Moresby, New Guinea); Proc.  
 Acad. Nat. Sci. Philadelphia, vol. 87,  
 p. 142, 1935 (Sriracha, Siam).  
 Bangkok and



1497

No. 1, June 1913, p. 39, fig. 30 (copied)  
(Fusan market, Korea).

Collichthys niveatus Jordan and Starbuck,  
Proc. U. S. Nat. Mus., vol. 31, 1906, p. 519,  
fig. 2. Port Arthur, Manchuria. <sup>L</sup><sub>M</sub> Jordan  
and Meek, Mem. Carnegie Mus., vol. 6,  
No. 1, June 1913, p. 39, fig. 31 (copied)  
(Chinnampo and Port Arthur).

Depth  $3\frac{2}{3}$  to 4; head  $2\frac{4}{5}$  to 3, width  
 $1\frac{7}{8}$  to  $2\frac{3}{5}$ . Snout  $3\frac{2}{3}$  to 4 in head from  
snout tip; eye  $3\frac{1}{5}$  in young to 7 with age,  
little greater than snout in young to  
 $1\frac{3}{4}$  with age,  $1\frac{1}{4}$  to  $2\frac{1}{4}$  in interorbital;  
lower jaw slightly protrudes; maxillary  
reaches opposite hind eye edge or  
slightly beyond, length  $1\frac{1}{4}$  to  $1\frac{9}{10}$  in  
head from snout tip; teeth moderately  
small, in villiform bands in jaws;  
interorbital  $2\frac{2}{3}$  to 3, well convex;  
preopercle edge with 2 or 3 denticles.



? Scomber rim Forskål, Descript.  
Animal., p. 54, 1775 (type locality,  
 Sjedda, Red Sea).

Caranx petaurista (Geoffroy Sainte  
Hilaire, Descript. Egypte, Poiss.,  
 p. 325, pl. 23, fig. 1, 1809; p. 325,  
 1825 (type locality, Egypt). —  
Klunzinger, Verh. zool. bot. Ges. Wien, vol. 21, p.  
 456, 1871 (Red Sea).

Zonichthys subcarinata Swainson,  
Nat. Hist. Animals, vol. 2, p. 248, 1839  
 (on Poloosoo-parah Russell, Fishes of  
Coromandel, vol. 2, p. 36, pl. 149,  
 1803, type locality, Vizagapatam).

Caranx mentalis (Ehrenberg) Cuvier,  
Hist. Nat. Poiss., vol. 9, p. 124, 1833  
 (type locality, Red Sea).

— Klunzinger, Verh. zool. bot. Ges.  
Wien, vol. 21, (1871) p. 456<sup>5</sup> (Red Sea).



? Sciaena megun Basilewsky, Nov.  
Mem. Soc. Nat. Moscou, vol. 10, 1855,  
p. 222. Mari meridiano; Peking.

? Sciaena chuan-chua Basilewsky, op.  
cit., vol. 10, 1855, p. 222. Gulf of Pechili.

Collichthys chinensis Steindachner,  
Verhandl. zool. bot. Gesell. Wien, vol. 16,  
1866, p. 475. Hong Kong. (name in synonymy.)

Larumichthys caibuna Jordan and  
Starks, Proc. U. S. Nat. Mus., vol. 28, 1905,  
p. 204, fig. 8. Somewhere on the coast of  
Korea. <sup>1</sup>/<sub>2</sub> Jordan and Metz, Mem. Carnegie  
Mus., vol. 6, no. 1, June 1913, p. 38, fig. 29  
(Chinnampo).

Collichthys fragilis Jordan and Seale,  
Proc. U. S. Nat. Mus., vol. 29, 1906, p. 522,  
fig. 4. Shanghai. <sup>1</sup>/<sub>2</sub> Jordan and Starks,  
Proc. U. S. Nat. Mus., vol. 31, 1906, p. 518  
(Port Arthur, Manchuria). <sup>1</sup>/<sub>2</sub> Jordan  
and Metz, Mem. Carnegie Mus., vol. 6,



Caranx poloosoo Richardson,  
Voy. Erebus and Terror, Ichth.,  
~~pl. 58~~, pl. 58, figs. 4-5, 1844-48  
 (type locality, Australia).

~~Caranx ruppellii Snyder, Cat. Fish.  
 Brit. Mus., vol. 2, p. 415, 1860 (on~~

Caranx edentulus Alleyne and  
Macleay, Proc. Linn. Soc. New South  
 Wales, vol. 1, pt. 4, (1877) p. 327, pl.  
 11, fig. 2, (type locality, Percy Islands,  
 Queensland).

Caranx edentulus Jouan, Mém. Soc.  
 Sci. Nat. Cherbourg, vol. 21, p. 333,  
 1877-78 (on Caranx Jouan, op. cit.,  
 vol. 8, p. 295, 1861 (type locality,  
 Uitoe, New Caledonia).



Acad. Nat. Sci. Philadelphia, 1897, p.  
77 (Swatow).

Collichthys lucidus Martens, Preuss.

Expéd. Est Asien, 1876, p. 390 (Shanghai).

<sup>1</sup>/<sub>m</sub> Jordan and Starks, Proc. U. S. Nat.  
Mus., vol. 28, 1905, p. 204 (Korea). —

Jordan and Hutchins, Mem. Carnegie Mus.,  
vol. 6, no. 1, June 1913, p. 38 (Korea). <sup>1</sup>/<sub>m</sub>

Fowler and Bean, Proc. U. S. Nat. Mus.,  
vol. 58, 1920, p. 315 (Hoochow). <sup>1</sup>/<sub>m</sub> — Fowler,

Proc. Acad. Nat. Sci. Philadelphia, 1929  
(1930), p. 596 (Shanghai), p. 610 (Hong Kong).

Hemiscliaena lucida Bleeker, Natuurk.

Tijdschr. Dierk., vol. 2, 1865, p. 56 (Amoy).

<sup>1</sup>/<sub>m</sub> Sauvage, Bull. Soc. Philomath., Paris,  
series 7, vol. 5, 1881, p. 106 (Swatow).

Sciaenoides lucidus Steindachner, Sitz.

Ber. Akad. Wiss. Wien, math.-naturw.

Klasse, vol. 102, pt. 1, 1893, p. 236 (Swatow).



Caranx obtusiceps Macleay, Proc.  
Linn. Soc. New South Wales,  
vol. 7, pt. 3, (1882, p. 357) (type  
Port Moresby, New Guinea).

Caranx cives De Vis, Proc. Linn.  
Soc. New South Wales, vol. 9, pt. 3,  
(1884, p. 540) (type locality, Coast  
of North Queensland).

Caranx regularis Garman, Bull.  
Mus. Comp. Zool., vol. 39, pt. 8,  
p. 232, 1903 (type locality,  
Suva, Fiji).



pnul 129

4438

Collichthys lucida (Richardson)

Sciaena lucida Richardson, Voyage  
Sulphur, Fishes, 1844, p. 87, pl. 44, figs.  
3-4. China Seas; Ichth. China Japan,  
1846, p. 224 (China Seas, Chusan, Ningpo,  
Canton).

Collichthys lucida Günther, Cat. Fishes  
Brit. Mus., vol. 2, 1860, p. 312 (China;  
types; Chusan), p. 526 (Amoy); Zool.  
Record, Pisces, 1866, p. 143 (note).  $\frac{1}{2m}$

Steindachner, Verhandl. zool. bot. Gesell.  
Wien, vol. 16, 1866, p. 475 (Hong Kong).  $\frac{1}{2m}$

Bleeker, Verslagen Meded. Akad. Wetensch.  
Amsterdam, ~~ser. 2~~, vol. 4, 1870, p. 252

(China).  $\frac{1}{2m}$  Karoli, Termesz. Füzetek,

Budapest, vol. 5, 1881, p. 16 (Canton).  $\frac{1}{m}$

→ Jordan and Eigenmann, Rep. U. S. Fish  
Comm., pt. 14, 1886 (1889), p. 248 (Swatow).

$\frac{1}{2m}$  Elera, Cat. Fauna Filipinas, vol. 1, 1895,  
p. 503 (Luzon; Manila).  $\frac{1}{m}$  Rutter, Proc.



Depth  $2\frac{1}{5}$  to  $2\frac{1}{2}$ ; head 3 to  $3\frac{1}{8}$ , width  $2\frac{1}{8}$  to  $2\frac{1}{4}$ . Snout  $2\frac{1}{8}$  to  $2\frac{2}{5}$  in head; eye 5 to  $5\frac{1}{4}$ , 2 to  $2\frac{1}{5}$  in snout,  $1\frac{3}{4}$  to 2 in inter-orbital; maxillary reaches  $\frac{4}{5}$  or  $\frac{7}{8}$  to eye, expansion  $1\frac{1}{3}$  to  $1\frac{1}{2}$  in eye, length  $2\frac{3}{5}$  to 3 in head; interorbital 3 to  $3\frac{1}{10}$ , with convexly elevated to trenchant predorsal beel. Gill rakers 10 + 21, lanceolate.

Scales 100 to 106 along lateral line of which 13 to 27 with spine (last 4 on caudal base). Straight section of lateral line  $1\frac{1}{5}$  to  $1\frac{3}{5}$  in arch. Breast finely scaled.

D. I, VII or I, VIII - I, 18 to I, 21, third spine  $2\frac{1}{2}$  to  $2\frac{4}{5}$  in head, first



ray 2 to  $2\frac{1}{5}$ ; A. II - I, 15 to I, 17,  
 first ray  $2\frac{1}{10}$  to  $2\frac{1}{2}$ ; caudal 1  
 to  $1\frac{1}{10}$ , forked; least depth of  
 caudal peduncle  $5\frac{7}{8}$  to  $6\frac{2}{5}$ ;  
 ventral  $2\frac{1}{4}$  to 3, rays I, 5;  
 pectoral  $2\frac{7}{8}$  to 3 in fish without  
 caudal, rays II, 20.

Back brown, below white.  
 Six vertical black bands;  
 usually with as many narrower  
 blackish lines in intervening  
 pale areas and these alternating;  
 first through eye wide as pupil.  
 On trunk and tail narrower  
 and less distinct parallel  
 dusky black bands. Fins brown,  
 lower little paler, in life more  
 or less yellowish.



Red Sea, Arabia, Zanzibar,  
Mozambique, Zululand, Madagascar,  
Madagascaris, Seychelles, India,  
Ceylon, Andamans, Malaya,  
East Indies, Philippines,  
Formosa, Western Australia,  
North and North-west Australia,  
Queensland, Hawaii, Mexico and  
Panama.



9322, 9328. Cebu markets.  
August 17, 1909. Length 305 to  
335 mm.

21928, 21929. Manila market.  
April 16, 1909. Length 146 to 148 mm.

11840. Manila market. April  
24, 1909. Length 210 mm.

One example. Matnog Bay,  
east coast of Luzon. May 31, 1909.  
Length 44 mm.

6728, 6729. Tacloban market.  
July 25, 1909. Length 183 to 185 mm.

One example [360]. Sandakan Bay,  
Borneo. March 2, 1908. March 2, 1908.  
Length 93 mm.

A1457. Kait Point, Libani Bay,  
Celebes. December 29, 1909. Length  
260 mm.



of Malabar, 1865, p. 29 (compiled). <sup>1</sup>/<sub>m</sub>  
Schmeltz, Cat. Mus. Godeffroy, no. 4, 1869, p. 14 (Kandavu). <sup>1</sup>/<sub>m</sub>  
Günther, Journ. Mus. Godeffroy, vols. <sup>1</sup>/<sub>m</sub>  
2-3, pls. 5-6, 1874, p. 58, pl. 45, fig. B  
(Formosa, Philippines, Zanzibar, Savaii,  
Tonga). <sup>1</sup>/<sub>m</sub> Schmeltz, Cat. Mus. Godeffroy,  
no. 5, 1874, p. 23 (Viti, Savaii, Tongatabu).  
<sup>1</sup>/<sub>m</sub> Alleyne and Macleay, Proc. Linn. Soc.  
New South Wales, vol. 1, 1876, p. 274  
(Cape <sup>1</sup>/<sub>m</sub> Grenville). <sup>1</sup>/<sub>m</sub> Macleay, Proc. Linn.  
Soc. New South Wales, vol. 7, 1882, p. 245  
(New Guinea). <sup>1</sup>/<sub>m</sub> Fowler, Journ. Acad. Nat.  
Sci. Philadelphia, series 2, vol. 12, 1904,  
p. 530 (Padang). — Pearson, Ceylon Administrat. Rep.,  
1915-18, p. F18.  
Mullus malabaricus Playfair, Fishes of  
Zanzibar, 1866, p. 41 (Aden; Zanzibar).  
Upeneus griseofrenatus Kner, Sitz. Ber.  
Akad. Wiss. Wien, math.-naturwiss. Klasse,  
vol. 57, pt. 1, 1868, p. 305, pl. 3, fig. 7. Kandavu,  
Fiji. <sup>1</sup>/<sub>m</sub> Schmeltz, Cat. Mus. Godeffroy, no.  
4, 1869, p. 14 (Kandavu).



A. N. S. P., one example. Orion,  
Philippines. 1923. Rev. Joseph Clemens.  
Purchased. Length 246 mm.



~~1758~~  
Ogilby, Edible Fish. New South Wales, 1893,  
p. 6. Waite, Sea Fisher. Rep. Thetis,  
1898, p. 23 (between Newcastle and  
Port Stephens, in 48 fathoms). Stead,  
Fishes of Australia, 1906, pp. 96, 105, fig.  
39 (New South Wales, Victoria, Queensland).  
Fowler, Proc. Acad. Nat. Sci. Philadelphia,  
1907, p. 433 (Sorrento, Victoria). Stead,  
Edible Fish. New South Wales, 1908, p. 62.  
Waite, Biol. Res. Endeavour, vol. 3, pt. 3,  
April 21, 1915, p. 143 (type of Enoplosus  
serotinus; Wide Bay, Queensland; 24 miles  
south South-east of Eagles Nest, Victoria,  
in 45 fathoms). Roughley, Fishes of Australia,  
1916, p. 85, pl. 26 (New South Wales, Victoria,



# Genus Carangoides Bleeker

Carangoides Bleeker, Nat. Tijds.  
ned. Indie, vol. 1, pp. 343, 352,  
1850. (Type Caranx praecustus  
Bennett, designated by Jordan  
and Evermann, Genera of Fishes,  
pt. 2, p. 248, 1919.)

(Olisthus Agassiz, Monem. Zool., Index Univers. p. 257, 1846.)

(~~See~~ Type Scomber malabaricus Schneider.)

Olistus Cuvier, Hist. Nat. Poiss.,  
Règne Animal, ed. 2, vol. 2, p. 209,  
1829. Atypic. (Type "Olistus  
malabaricus Cuv. & Val." = Scomber  
malabaricus Schneider, designated  
by Jordan and Evermann, Genera  
of Fishes, pt. 2, p. 129, 1919.)

Citula Cuvier, Règne Animal, ed.  
2, vol. 2, p. 315, ~~1829~~ 1829. (Type  
Sciaena armata Forskål.)



179 Kyphosus cinerascens (Forskål)

Sciaena cinerascens Forskål, Descript.  
Animal., 1775, p. ~~XII~~<sup>53</sup>, 53. Arabia.  $\frac{1}{m}$   
Bonnaterre, Tabl. Ichth., 1788, p. 125  
(Red Sea).  $\frac{1}{m}$  Gmelin, Syst. Nat. Linn.,  
vol. 1, 1789, p. 1305 (Arabia).  $\frac{1}{m}$  Walbaum,  
Artedi Pisc., vol. 3, 1792, p. 312 (on  
Forskål).

Pimalepterus cinerascens Day, Fishes  
of India, pt. 1, 1875, p. 143, pl. 35, fig. 3.  
 $\frac{1}{m}$  Bleeker, Atlas Ichth. Ind. Néerland.,  
vol. 9, 1877, p. 15, pl. (2) 364, fig. 4  
(Sumatra, Banka, Cocos, Java, Bali,  
Solor, Flores, Celebes, Timor, Albi  
major, Amboina, Saparua, Philippines,  
Papua).  $\frac{1}{m}$  Günther, Linn. Mag. Nat.  
Hist., series 5, vol. 18, 186, p. 368  
(note).  $\frac{1}{m}$  Klunzinger, Fische  
Roth. Meer., 1884, p. 64.  $\frac{1}{m}$  Meyer,  
An. Soc. Españ. Hist. Nat. Madrid,



Usacaranx Whitley, Australian  
Zoologist, vol. 6, Pt. 4, p. 316,  
Feb. 3, 1931. (Type Caranx  
nobilis Macleay, orthotypic.)

Turrun Whitley, Rec. Austral. Mus.,  
vol. 18, ~~p.~~ No. 6, p. 337, April 20, 1932.  
(Type Turrun emburyi Whitley,  
orthotypic.)



52488 U.S.N.M. Apia. Bureau  
of Fisheries. Length 185 to 293 mm.  
5 examples.

52729 U.S.N.M. Hawaiian Islands.  
Bureau of Fisheries (No. 03788). Length  
260 mm.

55431 U.S.N.M. Hilo, Hawaii.  
~~Jordan and Evermann~~ Bureau of Fisheries  
1901. Length 86 to 170 mm. 80 examples.  
As Mulloidex vanicolensis.

55518 U.S.N.M. Hawaii. Dr. O.P.  
Jenkins. Length 212 mm?

56026 U.S.N.M. Zamboanga. Bureau  
of Fisheries (No. 4090). Length 252 mm.  
Depth 4. Lower gill rakers 18. As  
Mulloidex vanicolensis.

56126 U.S.N.M. San Fabian.  
Bureau of Fisheries (No. 4130). Length  
138 mm.



Body oblong to ovate, compressed. Head moderate, rather deep, compressed. Snout usually blunt in profile. Eye premedian in head, adipose lids rudimentary or marginal. Mouth moderate or large, lower jaw prominent or protrudes. Teeth anteriorly villiform in jaws, exceptionally some front outer teeth little enlarged. Teeth on vomer, palatines and tongue. Interorbital elevated. Breast scaled or variably laterally and below naked. Arch of lateral line long, moderately convex, armed with rather small scutes on usually short straight section. Front rays of soft dorsal and anal more or less elevated,



none of rays filamentous.

A large genus, usually associated with Caranx, with pluriserial dentition in front of jaws or only exceptionally some of outer ones stronger, arch of lateral line usually long and low, and front dorsal and anal rays often more or less prolonged.



## Analysis of Species

a. Only anterior dorsal and anal rays prolonged, never median ones.  
~~h. 1/2~~ ~~gill rakers below 10 to 26.~~

c. Carangoides. Breast largely scaly, when scaleless below naked area not reaching up more than half way to pectoral or beyond ventral bases.

d. Breast entirely scaly, exceptionally with median line naked or scales lost; front rays of soft dorsal and anal not elevated into lobe, at most only as slight indication with age; scales rather conspicuous; dorsal rays 22 to 24, anal 19 or 20.

e. Opercle with soft bluish spot.  
f. Arch of lateral line slight, twice longer than straight section, which begins below 20th dorsal ray; scutes 32 to 38. plagiotaenia.  
g. Arch of lateral line moderate, longer than straight section, which begins below 7th to 9th dorsal ray;



scutes 25 to 31. praeustus.  
georgianus.  
Opercle with black spot nearly large as eye.

d.<sup>2</sup> Breast naked ventrally and on restricted lower lateral area, though well below pectoral; front dorsal and anal rays elevated into falciform lobe; dorsal rays 26 to 30, anal 22 to 26.

g.<sup>1</sup> Scales present only on hind part of straight section of lateral line; lower jaw prominently protrudes.

h.<sup>1</sup> Arch of lateral line reaches  $\frac{2}{3}$  in soft dorsal; scutes 35, depth 16 in body depth; dorsal rays 27 or 28, anal 23.

ophthalmotaenia.

h.<sup>3</sup> Arch of lateral line reaches  $\frac{1}{2}$  in soft dorsal; scutes 15, behind last third of soft dorsal; dorsal rays 29 or 30, anal 24 to 26.

ferdau.

g.<sup>2</sup> Scales present along whole extent of straight section of lateral line;

h.<sup>2</sup> Arch of l. l. reaches  $\frac{1}{3}$  in soft dorsal; scutes 40; D. rays 29, anal 24. emburyi.



1687

lower jaw but slightly longer than upper. equula.

L.<sup>2</sup> Olistus. Naked area on chest and breast reaches pectoral and ventral bases or little beyond.

i.<sup>1</sup> Level of front end of mouth cleft opposite eye or its lower border.

ix.<sup>1</sup> Scutes 23 to 25; dorsal rays 30 or 31, anal 25 or 26, front ones not extended in falciform lobes. gymostethus.

ix.<sup>2</sup> Scutes 20; dorsal rays 20 or 21, anal 16 or 17, front ones extended in long pointed lobes. armatus.

ix.<sup>2</sup> Level of front end of mouth cleft clearly below level of eye; scutes 36 to 40; arch of lateral line slightly less than straight section; dorsal rays 18 to 22, anal 16 to 19.

k.<sup>1</sup> Front dorsal and anal rays not extended in long pointed lobes.



l.<sup>1</sup> Lower gill rakers 15 to 18;  
dorsal rays 18 to 21, anal  
16 to 18.

m.<sup>1</sup> Pectoral long,  $1\frac{1}{4}$  to  $2\frac{7}{8}$   
in fish without caudal.  
chrysophrys.

m.<sup>2</sup> Pectoral subequal with  
head or 3 in fish without  
caudal. coeruleopinnatus.

l.<sup>2</sup> Lower gill rakers 22 to 24;  
dorsal rays 21 or 22, anal  
18 or 19. malabaricus.

k.<sup>2</sup> Front dorsal and anal  
rays extended in long pointed  
lobes; lower gill rakers  
10 to 19.

m.<sup>1</sup> Scutes 23 to 25; dorsal  
rays 17 to 20, anal 16 to 18.

m.<sup>2</sup> Scutes 37 to 40; dorsal  
rays 20 to 22, anal 17 to 19.  
dinema.

l.<sup>2</sup> Gill rakers below 38 to 41. aurocha.

a. hemacarangoides. Median dorsal and  
anal rays prolonged, graduated shorter  
anteriorly and posteriorly. radiatus.



1691  
Carangoides plagiotaenia Bleeker

Carangoides plagiotaenia Bleeker,  
Act. Soc. Sci. Ind. Neerl., vol. 2,  
no. 7, p. (5) 59, 1857 (type locality,  
Amboyna).



76063 U. S. N. M. Shanghai, China.  
June 1927. A. C. de Sowerby. Length  
216 to 238 mm. 3 examples.

85872 U. S. N. M. China. A. C. de  
Sowerby. Length 58 to 158 mm. 26 examples.  
These small specimens were preserved  
in formaline and the dark lines on  
the back have faded or are inconspicuous.  
In the very small ones there are 5 or 6  
obscure large blotches along the back,  
chiefly above the lateral line and as  
the fish grow larger these break up  
into spots or irregular short streaks,  
so that the largest approach the pattern  
of Sciaena mitsukurii. All have the  
spinous dorsal blackish terminally,  
the soft dorsal pale basally with



Caranx plagiotaenia Günther,  
Cat. Fish. Brit. Mus., vol. 2, p.  
435, 1860 (copied). — Weber,  
~~Zool. Forschungen. Senckenbergische~~  
Denkschr., vol. 8, p. 106, 1895 (Amboina).

Caranx (Carangoides) plagiotaenia  
Weber and Beaufort, Fish. Indo-  
 Austral. Archipel., vol. 6, p. 226,  
fig. 45, 1931 (Amboina).



above lateral line many dark wavy streaks, more or less oblique, but variably broken and irregular, often leaving pale or immaculate area, frequently appearing as pale band parallel with lateral line. Below lateral line down till level with pectoral dark lines all more or less oblique. Iris whitish. Spinous dorsal blackish, basally whitish. Soft dorsal whitish basally, with black blotch at base of each ray and fin subterminally dusky. Caudal brown, dusky terminally. Other fins all pale brownish, few dusky obscure blotches on front of soft anal.

China, Korea, Japan.



Caranx ferdau (not Forsk.)

Rüppell, Atlas Reis. nördl. Afrika,

Fische, p. 99, pl. 25, fig. 6, 1828.

— Cuvier, Hist. Nat. Poiss., vol. 9, p.

56, 1833 (part). — Günther, Cat.

Fish. Brit. Mus., vol. 2, p. 439, 1860

(part) —

Caranx (Carangoides) ferdau Wakaya,  
Ann. Carnegie Mus., vol. 15, p. 165, <sup>pl. 19, fig. 2,</sup> 1924  
(Ryukyu).



1577

subbasal row of dark spots and  
then terminal half of fin dark.

86359 U.S.N.M. China. A. de C.

Sowerby. Length 107 mm.

87022 U.S.N.M. Foochow. A. de C.

Sowerby. Length 63 mm.

87060 U.S.N.M. Foochow. A. de C.

Sowerby. Length 67 mm.

97063 U.S.N.M. Shanghai. June 1927.

A. de C. Sowerby. Length 63 to 250 mm.

13 examples.



Caranx micraspis Kner, Sitzs. Ber.  
Akad. Wiss. Wien, math.-naturw.  
Kl., vol. 58, p. 28, 1868 (type  
locality, Sunda Strait); p. 321,  
pl. 5, fig. 13.

Caranx compressus Day, Proc. Zool.  
Soc. London, p. 689, 1870 (type  
locality, Andaman Islands);  
Fishes of India, pt. 2, p. 221, pl.  
50, fig. 1, 1876 (Andamans);  
Fauna of British India, Fishes,  
vol. 2, p. 161, 1889.



Iris dark, with gold stripes above and below. Spinous dorsal yellowish green, black bar on membranes from base of first spine to tip of fourth. Soft dorsal with membranes greenish, blotched with darker, rays with dusky pink, tips black, increasing in depth posteriorly. Caudal dusky pink, membranes with greenish shades and edges of lobes darker. Anal like caudal in general color, very dark greenish bar at base. Pectorals very pale pink. Ventral rays pinkish, spine and front white, membrane and second ray darker green.



Caranx (Carangoides) compressus  
Klunzinger, Fische Roth. Meer., vol. 1,  
p. 98, 1884. — Weber and Beaufort,  
Fish. Indo Austral. Archip., vol.  
6, p. 223, 1931 (compiled).



and 24059.  
 6149, <sup>east of</sup> Tonguil Island, <sup>^</sup>Gumila Reef,  
 south of Zamboanga. September 14, 1909.  
 Length, <sup>77 to</sup> 82 mm. 3 examples.

8020, 8030 [331], 8031 [332], 8032.

Tumindao Reef, Sulu Archipelago.  
 February 26, 1908. Length 88 to 106 mm.  
 Dusky above, with more or less  
 translucence, scale edges seal brown,  
 central bases of row above lateral  
 line blotched with same; ground color  
 becomes pearly and pink below with  
 dusky basal blotches on scales.  
 Blackish axil band from snout tip  
 through eye to caudal peduncle where  
 indistinct, ending in black blotch  
 less than eye on caudal base.



Caramx brevicarinatus Klunzinger,  
Verh. zool. bot. Ges. Wien, vol. 21,  
p. 461, 1871 (type locality, Red Sea).



5938. Sabtan Island. November 8, 1908.  
Length 114 mm.

13362, 13363, 13365, 15397, 15398. Sablayan,  
Mindoro. December 12, 1908. Length 88 to  
103 mm.

<sup>8074 and</sup>  
8076. Sacol Island, east of Zamboanga.  
September 9, 1909. Length <sup>80 to</sup> 93 mm.

23368. Santa Cruz Island, Marinduque.  
April 24, 1908. Length 70 mm.

23327 to 23331. Simabuc Island,  
north of Tawi Tawi. September 22, 1909.  
Length 73 to 104 mm.

<sup>23405 and 23406.</sup>  
19551 and 19556, Singaan Island,  
between Jolo and Tawi Tawi. September  
21, 1909. Length 68 to <sup>122</sup> 109 mm.



Depth  $2\frac{1}{8}$  to  $3\frac{1}{10}$ ; head  $3\frac{1}{8}$  to  $3\frac{3}{5}$ , width  $2\frac{1}{8}$  to  $2\frac{2}{5}$ . Snout  $2\frac{2}{3}$  to  $3\frac{1}{4}$  in head from snout tip; eye 3 to  $4\frac{3}{4}$ , slightly greater than snout in young to  $1\frac{3}{4}$  in snout with age,  $1$  to  $1\frac{1}{3}$  in interorbital; maxillary reach  $\frac{7}{8}$  to or to eye, expansion 2 to 3 in eye, length  $2\frac{1}{5}$  to  $2\frac{1}{2}$  in head from snout tip, interorbital  $3\frac{1}{5}$  to  $3\frac{2}{3}$ , convexly elevated. Gill rakers 11 + 25, lanceolate; gill filaments  $\frac{3}{4}$  of gill rakers, which  $1\frac{1}{2}$  in eye.

Scales 62 to 65 + 32 to 38 (of which 15 to 20 scutes) in lateral line; straight section  $1\frac{3}{4}$  in long low arch. Breast and chest densely and closely scaled, also vertical fins.

D. I, VIII - I, 23, I, spinous fin



small, second spine  $2\frac{1}{4}$  to 3 in total head, first branched ray  $1\frac{3}{4}$  to 2; A. II - I, 19, I, first branched ray 2 to  $2\frac{1}{4}$ ; caudal 1 to  $1\frac{1}{4}$ , deeply forked; least depth of caudal peduncle  $7\frac{1}{4}$  to  $7\frac{2}{5}$ ; ventral  $2\frac{3}{4}$  to  $2\frac{4}{5}$ ; pectoral  $2\frac{7}{8}$  to 3 in fish without caudal, rays II, 19.

Back light brownish, sides and below pale to whitish. Fins pale brownish. Iris pale. Small inconspicuous black blotch, narrowly on upper hind edge of opercle. Pectoral axil pale.

Red Sea, Andamans, East Indies, Philippines, Riu Kiu, Queensland. This species as figured and described by Weber and Beaufort, based on a small example does not seem to me to differ from Caranx compressus Day.



9373. Cebu market. August 27, 1909.<sup>1689</sup>  
Length 500 mm, caudal tips broken.

9265. Inamucan Bay. August  
8, 1909. Length 204 mm.

9210. Mahinog, ~~San~~ Camiguin  
Island, between Leyte and  
Mindanao.

6581. Maricaban Island, near  
Sepoc Point. July 21, 1908. Length  
372 mm.

~~9301~~ 10821. Murcielagos Bay,  
Mindanao. August 20, 1909.  
Length 112 mm.

9301. Murcielagos Bay. August  
9, 1909. Length 225 mm.

9230. Opol, Mindanao. August 4,  
1909. Length 287 mm.

6488. Tilig, Lubang Island.  
July 15, 1908.

21724. Tulayan Island, Jolo.  
September 15, 1909. Length 198 mm.



and figured by Day, except that he gives the upper  $\frac{2}{3}$  of the first dorsal black. Not only the dentition, but the dark spot above the pectoral axil so distinctly shown by both Day and Steindachner is an outstanding feature, besides the fin formula and squamation also in agreement.



1700

A 894, A 899. Limbe Strait, Celebes,  
Dutch East Indies. November 10, 1909.  
Length 255 to 380 mm.

A 1381. Basa Reef, Celebes.  
December 17, 1909. Length 305 mm.

A 1135, A. 1136.  
~~A 894~~, Kavoa Island, November  
21, 1909. Length 273 to 295 mm.

A. 988.  
A. 987, Togian Bay, Togian Island.  
November 19, 1909. Length <sup>305 to</sup> 367 mm.

A. 1109, A. 1110. Makyan Island.  
November 28, 1909. Length 288 mm.

A. 692. Si Amil Island. September 26,  
1909. Length 290 mm.

A. 770. Mabul Island. September  
29, 1909. Length 294 mm.

A. 1062, A. 1063. Tidore Island.  
November 25, 1909. Length 290 mm.

A. 832. Talisse Island. November 9,  
1909. Length 240 mm.

A. 607, A. 608. Singaan Island.  
September 21, 1909. Length 220 to 238 mm.



end; 8 or 9 rows across cheek to preopercle edge.

D. X, I, 27, third spine  $2\frac{1}{4}$  in head, first ray 3; A. II, 7, second spine  $2\frac{7}{8}$ , first ray  $2\frac{1}{5}$ ; caudal  $1\frac{2}{5}$ , obtusely cuneate; least depth of caudal peduncle  $3\frac{1}{3}$ ; pectoral  $1\frac{1}{3}$ ; ventral  $1\frac{2}{3}$ .

Dark gold brown, with reddish tinge above lateral line. Each scale with on back with slightly paler spot forming longitudinal streaks. Dorsals pale. Caudal, anal and paired fins blackish brown. Length 163 mm. (Steindachner.)

Hong Kong. Although Steindachner says it is near Johnius semiluctuosus it seems to me more closely related to Johnius axillaris, especially as described



Carangoides praenustus (Bennett)

Caranx praenustus Bennett, Life of Raffles, p. 689, 1830 (type locality, Sumatra). — Fowler, Proc. Acad. Nat. Sci. Philadelphia, vol. 79, p. 271, 1927 (Orani; Orion; Philippines).

— Günther, Cat. Fish. Brit. Mus., vol. 2, p. 436, 1860 (copied).

— Peters, Monatsber. Acad. Wiss. Berlin, p. 262, 1868.

— Günther, Journ. Mus. Godeffroy, vol. 2, p. 134, 1876 (reference). — Martens, Reise Preuss. Exped. Ost Asien, vol. 1, p. 391, 1876 (Singapore; Paturnan, Java).



20512. Guipulugan, east coast Negros. April 2, 1908. Length 45 mm.
7439. Guntao Island. December 20, 1908. Length 292 mm.
6109. Iloilo market. June 1, 1908. Length 270 mm. Obscure transverse  
bronzed stripes on side. Crimson streak across top of eyeball, on  
opercle flap and behind preopercle. Dorsals and caudal more or less  
vermilion. Anal and pectorals pale orange.
- 6036 to 6038. Little Santa Cruz Island. May 28, 1908. Length 287 to 310 mm.
- 8366 and 8372. Malapascua Island. March 16, 1908. Length 284 to 288 mm.
- Side of head and body above with brassy shades extending over olive  
green, which fades entirely after death but remains on head. No stripes  
on head, mouth membranes and inner surfaces scarlet, not extending to  
gill openings. Red tinge between temporal bands of scales. Dorsals bright  
scarlet or vermilion terminally and posteriorly. Anal vermilion. Caudal  
mostly yellow, vermilion at tips. Pectoral rays bright vermilion, mem-  
branes mostly transparent. Ventrals very pale, slightly reddish on rays.
- 6179, 16402, 16403. Mansalay, Mindoro. June 4, 1908. Length 102 to 269 mm.
- 7225 and 7226. Masinloc Bay, Port Matalvi, Zambales. November 22-23, 1908.  
Length 227 to 277 mm. Dusky yellowish shades above, fading to more or  
less brassy, most distinct in smaller example. Broad scarlet or bronze  
stripe across preorbital, from eye to snout, below nostril. Bronze and  
orange markings around and behind eye. Inside mouth, also maxillary  
membranes scarlet. Irregular transverse obscure bars of vermilion on  
sides, only last 3 or 1 from dorsal to anal axis and 2 on caudal peduncle  
distinct; on side of body bars more or less fusing and extend very little  
below axial line. Fins vermilion.



Caranx (Carangoides) praenustus  
Weber and Beaufort, Fishes Indo-  
Austral. Archip., vol. 6, p. 224, 1931  
(Batavia; Balikpapan and Kota  
Baru, Borneo; Macassar; Batjan).



300

Depth  $2\frac{3}{4}$  to  $2\frac{4}{5}$ ; head  $2\frac{2}{5}$  to  $2\frac{1}{2}$ ,  
width 2 to  $2\frac{1}{5}$ . Snout  $4\frac{1}{8}$  to  $4\frac{1}{3}$  in  
head from snout tip; eye  $3\frac{1}{4}$  to  $3\frac{2}{5}$ ,  
greater than snout or interorbital;  
maxillary extends till opposite hind  
pupil edge in adult, little beyond  
with age, expansion  $1\frac{4}{5}$  to 2 in eye,  
length 2 to  $2\frac{1}{8}$  in head; bands of  
villiform teeth in jaws and a small  
v-shaped band on vomer, also narrow  
band may be present on palatines  
though this often absent; interorbital  
 $4\frac{1}{3}$  to 5, level; preopercle ridge entire,  
edge finely denticulate. Gill rakers  
7 + 14, lanceolate, longer than gill  
filaments or 2 in eye.

Scales 24 in lateral line to caudal  
base and 3 more on latter, 2 or 3  
above, 6 below, 5 or 6 predorsal,



1703

Carangoides praenustus Bleeker,  
Nat. Tijds. Ned. Indië, vol. 2,  
p. 471, 1851 (Rio); vol. 3, p. 717,  
1852 (Goessangassam); Verh.  
Batavia. Genoot. (makreel.), vol.  
24, p. 60, 1852 (Batavia); (Nal. Ichth.  
Bengal), vol. 25, p. 46, 1853 (reference);  
Nat. Tijds. Ned. Indië, vol. 7, p.  
227, 1854 (Macassar), p. 312  
(Bantem); vol. 9, p. 394, 1855 (North  
Pasuruan); vol. 13, p. 284, 1857  
(Tjirutjup, Biliton); Act. Soc.  
Sci. Ind. Neerl., vol. 3, no. 5, p.  
2, 1857-58 (Macassar); Nat.  
Tijds. Ned. Indië, vol. 15, p. 242,  
1858 (Singapore); vol. 21, p. 138,  
1860 (Muntok, Banka).

— Fowler, Proc. Acad. Nat. Sci. Philadelphia,  
vol. 57, p. 141, fig. 107, 1935 (Bangkok;  
Sriracha).



26

134738 37

8 pt. Loaded  
Follow—Incl Caps

5599, 5600, 5631, 5676, 15984. Busin Harbor, Burias Island. April 22, 1908.

Length, 154 to 508 mm.

15190. Busin Harbor. March 7, 1909. Length, 216 mm.

21941. Cagayan, Sulu. January 8, 1909. Length, 68 mm.

7789. Candaran Island, Balabac. January 4, 1909. Length, 255 mm.

8278. Canmahala Bay, Luzon. March 11, 1909. Length, 303 mm.

12737. Capuan Bay, Pagbilao Island. February 24, 1909. Length, 133 mm.

8722, 8724. Caracaran, Batan Island. June 28, 1909. Length, 262 to 290 mm.

5538. Catangan Bay, Masbate. April 18, 1908. Length, 305 mm. On upper

surface of body centers of scales dusky olive, broadly bordered with brownish olive; middle of side more or less tinged with orange brown.

Indistinct dusky bars transversely on side become more distinct posteriorly, 2 crossing caudal peduncle. Under surface of body paler than back.

Top of head slate, with orange blotch above and behind eye; reddish area on occipital region, another before eyes and again on snout; pale vermilion

bar across preorbital; premaxillary membrane and mouth angle vermilion,

also roof and floor of mouth. Iris orange. Dorsal dull red, becomes

vermilion posteriorly. Anal similar, but lighter. Caudal and paired fins

reddish, membranes clear.

8581 and 20572. Catbalogan, Samar. April 15, 1908. Length, 98 to 107 mm.

7741 and 7742. Caxisigan Island, Balabac. January 2, 1908. Length, 297 or

298 mm.

7485, 18837, 19798. Endeavor Strait, near anchorage. December 22, 1908.

Length, 75 to 267 mm. Reddish preorbital bar and red bars on side.

5736. Generale Island, Capunuyugan. May 9, 1908. Length, 223 mm.

7278. Gigoso Point, Quinapundan Bay, Samar Island. July 28, 1909. Length,

207 mm.



Citula praeusta Bleeker, Verslag.  
Kon. Akad. Wet. Amsterdam, ser. 2,  
vol. 2, p. 293, 1868 (Rio, Bintang).



Bleeker had 5 specimens, 220 to 260 mm. My specimens agree with his figure, though several features are conspicuous in alcoholic materials which he does not show. Thus the outer or anterior large lateral nuchal scales are quite dark brown and much contrasted. Also the caudal is very dark over its basal half or two-thirds. The two dark transverse reddish basal lines Bleeker shows are not distinct at present in any of my specimens. In the present species the first anal ray is longer than the soft anal base.

A few of my specimens differ in their dark coloration, nearly or largely uniform chocolate brown, except some pale spots on each side of the abdomen posteriorly. The coloration is quite variable in alcoholic specimens. Usually there is a dark to blackish blotch, sometimes a little smaller than the eye or again even larger than the eye. Its position is variable, for it may be rather close behind the gill opening or about first third of pectoral, over middle of pectoral or over hind part of pectoral. One, 2, or even 3 dark blotches may occur. Some specimens show vertical transverse dark bars, and these 5 to 10.

8139. Alibijaban Island, Ragay Gulf, Luzon. March 6, 1909. Length, 290 mm.

13505, 16007, 16011, 17702 to 17704, 19270. Alimango Bay, Burias Island.

March 5, 1909. Length, 123 to 210 mm.

6501. Balikias Bay, Luzon. July 17, 1908. Length, 262 mm.

A504. Balukbaluk Island, south of Zamboanga. September 12, 1909. Length, 305 mm.

18921. Batan Island. June 5, 1909. Length, 132 mm.

8668. Biri Channel. June 22, 1909. Length, 313 mm.

7445, 7446, 10587 to 10589, 19774. Bolalo Bay, Malampaya Sound, Palawan Island.

December 21, 1908. Length, 47 to 289 mm.

12216. Bugsuk Island, Balabac. January 5, 1909. Length, 154 mm.



Caranx re Cuvier, Hist. nat. Poiss.,  
vol. 9, p. 57, 1833 (type locality,  
Pondicherry). — Bleeker, Nat. Geneesk.  
Arch. Ned. Indie, vol. 2, p. 517, 1845  
(Batavia). — Günther, Cat. Fish.  
Brit. Mus., vol. 2, p. 436, 1860 (Madras).  
— Day, Fishes of India, pt. 2, p. 220,  
pl. 49, fig. 6, 1876; Fauna British India,  
Fishes, vol. 2, p. 160, 1889.

— Jordan and Seale, Proc. U. S. Nat.  
Mus., vol. 28, (1905) p. 776, (Negros).

— Jordan and Richardson, Bull.  
Bur. Fisher., vol. 27, p. 250, 1907  
(1908) (Manila; Iloilo).

— Seale and Bean, Proc. U. S. Nat. Mus.,  
vol. 42, p. 599, Aug. 30, 1912 (Batavia).

Caranx via Seale, Philippine Journ.  
Sci., vol. 5, p. 271, 1910.

Selar re Bleeker, Verh. Batavia.  
Genoot. (Nat. Ichth. Bengal), vol. 25,  
p. 44, 1853 (reference). — Jordan and  
Starks, Ann. Carnegie Mus., vol. 11, p. 443,  
1917 (Ceylon).



no dipls

Depth  $2\frac{1}{4}$  to  $2\frac{1}{2}$ ; head  $2\frac{1}{2}$  to  $2\frac{7}{8}$ ; width  $2\frac{1}{8}$  to  $2\frac{4}{5}$ . Snout  $1\frac{3}{4}$  to  $2\frac{1}{5}$  in head; eye 3 to  $4\frac{1}{5}$ ,  $1\frac{1}{2}$  to  $2\frac{2}{5}$  in snout, greater to  $1\frac{1}{4}$  in interorbital with age; maxillary reaches opposite front nostril or about  $\frac{3}{4}$  in snout,  $2\frac{2}{5}$  to  $2\frac{7}{8}$  in head; lips broad, coriaceous; broad bands of villiform teeth in jaws, with outer row in each enlarged and usually conic, as 4 canines in front of each and last 3 to 5 each side as broad molars; interorbital  $3\frac{5}{5}$  to  $4\frac{4}{5}$ , broadly convex; cheek and most naked region of head with fine weak striae, on cheek as vertical parallel lines, otherwise as finely venulose. Gill rakers 2 to 5 + 5 or 6, short stout tubercles, little less than gill filaments.

Scales 42 to 46 in lateral line to caudal base and 2 to 5 more on latter; 5 to 7 above, 14 or 15 below, 7 to 9 predorsal; caudal and pectoral bases finely scaled. Scales with 12 to 18 basal radiating striae, with 1 to 4 medial auxiliaries; 2 to 155 apical denticles, with 4 to 8 transverse series of basal elements; circuli very fine.

D. X, 9, I, fourth spine  $2\frac{1}{5}$  to 3 in head, fourth ray  $2\frac{1}{8}$  to  $2\frac{1}{5}$ ; A. III, 8, I, third spine  $2\frac{7}{8}$  to 3, third ray  $2\frac{1}{3}$  to  $2\frac{3}{4}$ ; caudal  $1\frac{1}{4}$  to  $1\frac{1}{3}$ , emarginate; least depth of caudal peduncle  $2\frac{3}{5}$  to 3; pectoral 1 to  $1\frac{1}{5}$ ; ventral  $1\frac{1}{4}$  to  $1\frac{2}{5}$ .

Largely pale brownish, little paler below or on abdomen. Head little darker brown than body. Vertical fins rather dark, especially caudal which dusky basally. Paired fins dull brown. Iris dark brown.

East Indies, Philippines. Differs from Lethrinus haematopterus Schlegel in that the back is not so elevated anteriorly, and the soft dorsal and anal also not so elevated. Especially is the anal higher than long, while in L. haematopterus it is noticeably longer than high.

follet



Caranx praenustus var. ocellata  
Bleeker, Nat. Tijds. Ned. Indie,  
 vol. 1, p. 363, 1850 (type locality,  
 Batavia, Java); Verh. Batavia.  
Genoot. (Makreeel.), vol. 24, p. 60,  
 1852 (Batavia).

Caranx praenustus var. xanthopterus  
Bleeker, Nat. Tijds. Ned. Indie,  
 vol. 1, p. 364, 1850 (type locality,  
 Batavia, Java); Verh. Batavia.  
Genoot. (Makreeel.), vol. 24, p. 60,  
 1852 (Batavia).

Caranx melanostethus Day, Proc.  
Zool. Soc. London, 1865, p. 23 (type  
 locality, Cochin, Malabar); Fishes  
of Malabar, p. 83, pl. 6, 1865 (type).



Follow - Ind. B. 23  
Leaded

Depth  $3\frac{1}{3}$ ; head  $2\frac{7}{8}$ . Snout 2 in head; eye  $\frac{1}{3}$ ,  $1\frac{3}{5}$  in snout, maxillary reaches  $\frac{4}{5}$  to eye, length  $2\frac{4}{5}$  in head; teeth conic; interorbital low.

Scales 48 in lateral line, 5 above, 15 below, predorsal scales extending forward opposite hind eye edge; few small scales on postocular.

D. X, 9 or 10, third spine  $2\frac{1}{2}$  in head, fifth ray  $2\frac{1}{2}$ ; A. III, 8 or 9, third spine  $3\frac{1}{5}$ , first ray  $2\frac{1}{3}$ ; caudal  $1\frac{1}{4}$ , slightly emarginate; least depth of caudal peduncle 3; pectoral  $1\frac{2}{5}$ ; ventral  $1\frac{2}{3}$ .

Olivaceous above, below yellowish rosy. Iris yellowish. Snout and cheek without spots or lines. Above middle of pectoral below lateral line round blackish brown blotch. Ten or 11 transverse dark bands on body. Fins golden or yellowish pink, except pectoral rays all marked with dark spots. Length 115 mm. (Bleeker)

East Indies, Philippines, Micronesia. Herre and Montalban report it to 131 mm. in length.

Lethrinus hypselopterus Bleeker

Lethrinus hypselopterus BLEEKER, Nederland. Tijdschr. Dierk., vol. 4,

1873, p. 326. (Benculen, Sumatra; Singapore, Java, Obi major, Solor,

Waigiu; Atlas Ichth. Ind. Néerland., vol. 8, 1876-1877, p. 114, pl.

(52)330, fig. 3 (Sumatra, Singapore, Java, Obi major, Solor, Waigiu).

WEBER, Semon's Zool. Forsch. Reis. Austral., vol. 5, 1895, p. 265

(Ambon). - EVERMANN and SEALE, Bull. Bur. Fisher., vol. 26, 1906 (1907),

p. 86 (Philippines). - HERRE and MONTALBAN, Philippine Journ. Sci.,

vol. 33, No. 4, 1927, p. 419, pl. 4, fig. 1 (Zamboanga and Davao; Tam-

bagaan and Bungau Island). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia,

1927, p. 282 (Santa Maria, Calapan); Mem. Bishop Mus., vol. 10, 1928,

p. 216 (compiled).



Depth  $2\frac{3}{4}$  to 3; head  $3\frac{1}{5}$  to  $3\frac{1}{3}$ , width 2 to  $2\frac{1}{5}$ . Snout  $3\frac{1}{8}$  to  $3\frac{1}{4}$  in head from snout tip; eye  $3\frac{1}{4}$  to  $4\frac{3}{4}$ , 1 to  $1\frac{3}{5}$  in snout, 1 to  $1\frac{1}{2}$  in interorbital; maxillary reaches to eye or  $\frac{1}{5}$  in eye, expansion  $1\frac{1}{2}$  to  $2\frac{1}{5}$  in eye, length  $2\frac{1}{4}$  to  $2\frac{3}{5}$  in head from snout tip; interorbital  $3\frac{1}{4}$  to  $3\frac{2}{5}$ , convexly elevated. Gill rakers 8 or 9 + 25 or 26, lanceolate, equal gill filaments or  $1\frac{1}{2}$  in eye.

Scales 46 to 48 + 30 or 31 (last 2 on caudal base) in lateral line, straight section  $1\frac{1}{8}$  to  $1\frac{1}{2}$  in arch. Lower surface of breast naked to ventrals or sometimes partly scaled.

D. I, VIII - I, 22, I or I, 23, I,



third spine  $2\frac{1}{5}$  to  $2\frac{3}{4}$  in total head,  
 first ray 2 to  $2\frac{1}{5}$ ; A. II - I, 19, I  
 or I, 20, I, first ray  $2\frac{1}{8}$  to  $2\frac{3}{5}$ ;  
 caudal  $1\frac{1}{8}$  to  $1\frac{1}{5}$ , forked; least  
 depth of caudal peduncle  $5\frac{3}{4}$   
 to 6; pectoral  $1\frac{1}{4}$  to  $1\frac{1}{3}$ , rays  
 #, 19; ventral rays I, 5, length  
 $1\frac{1}{3}$  to 2 in total head.

Back blue gray, sides and  
 below silvery white. Iris  
 white. No dark spot on opercle.  
 Spinous dorsal dusky. Soft  
 dorsal brown, subapical black  
 blotch in front lobe, margined  
 white above. Caudal brown,  
 other fins paler.

India, Ceylon, Malaya, East  
 Indies, Philippines.



9108. Catbalogan, Samar. April 15, 1908. Length 178 mm.

11530. Malampaya Island, Palawan. December 26, 1908. Length 173 mm. Depth  $2\frac{3}{4}$ . Lower gill rakers 24. Scutes 25, straight section of lateral line  $1\frac{1}{8}$  in arch. A. II - I, 19. Silvery, gray above. Soft dorsal with black blotch.

One example. Malampaya River. December 26, 1908. Length 65 mm.

11447. Manila market. April 29, 1909. Length 172 mm.

1 example. Mantaguin Bay, Palawan. April 1, 1909. Length 52 mm.

8485. Mantaguin Bay. April 2, 1909. Length 235 mm.

11 examples. Sandakan Bay, Borneo. March 2, 1908. Length 126 to 135 mm. [365].



Case 179

Johnius semiluctuosus (Cuvier)

Coroina semiluctuosa Cuvier, Hist. Nat.

Pois., vol. 5, 1830, p. 106. Malabar, Goa,

Pondichery.  $\frac{1}{m}$  Jerdon, Madras Journ. Literat.

Science, 1851, p. 132.  $\frac{1}{m}$  Günther, Cat.

Fishes Brit. Mus., vol. 2, 1860, p. 304 (China).

$\frac{1}{m}$  Day, Fishes of Malabar, 1866, p. 53

(compiled).  $\frac{1}{m}$  Elera, Cat. Fauna Filipinas,

vol. 1, 1895, p. 502 (Luzon; Manila).  $\frac{1}{m}$

Buncker, Mitteil. Naturh. Mus. Hamburg,

vol. 21, 1903 (1905), p. 154 (Kuala Lumpur).

Johnius semiluctuosa Kner, Reise Novara,  
Fische, 1865, p. 134 (Java).

Johnius semiluctuosus Bleeker, Verhandel.

Kon. Akad. Wetensch. Amsterdam, ser. ~~14~~ 3,

vol. 14, 1874, p. 54 (compiled).

Sciaena semiluctuosa Day, Fishes of India,

pt. 2, 1876, p. 191 (Bombay, Sind, Beloochistan);

Fauna British India, <sup>Fishes</sup> vol. 2, 1889, p. 121.  $\frac{1}{m}$

Zugmayer, Abhandl. Kon. Bayer. Akad.



17544. Losogon market.  
March 12, 1909. Length 188 mm.



164

small spiny teeth at angle. Gill  
rakers bacillate.

Scales ctenoid, except on snout and  
infraorbital; 60 along above lateral line,  
50 along below; 6 or 7 scales above, 16  
to 18 below.

D. X, I, 27, weak spines flexible,  
third and fourth highest and nearly 2 in  
body depth; A. II, 7, second spine little  
longer than eye, not half high as rays;  
caudal cuneate, sharp pointed; pectoral  
equals head without snout; ventral  $\frac{2}{3}$   
of pectoral.

Back silvery, shot with metallic green  
and red. Belly like burnished silvery.  
Blue blotch on opercle. Pectorals yellow,  
other fins gray, suffused with orange.  
Length 280 mm. (Alcock.)



U. S. N. M., No. 51958. Negros.  
 Dr. Bashford Dean. 1901. Venter  
 31. Lower surface of chest and  
 breast entirely naked ~~from~~ before  
 ventral. Length 148 mm. As  
Caranx ire.

U. S. N. M., No. 72216. Cavite.  
 R. C. Mc Gregor. Length 78 mm.  
 As Caranx ire.

U. S. N. M., No. 72254. Iloilo.  
 R. C. Mc Gregor. Length 81 mm.  
 As Caranx ire.

U. S. N. M., No. 72599. Batavia,  
 Java. April 2, 1909. O. Bryant  
 and W. Palmer. Length 130 mm.  
 Breast and chest largely covered  
 with fine scales, except small  
 naked area on chest and small  
 area directly before each ventral.  
 As Caranx ire.



Follow—Incl Caps  
8 pt. Leaded

22

Lethrinus amboinensis Bleeker

type locality:

- Lethrinus amboinensis BLEEKER, Nat. Tijds. Nederland. Indië, vol. 6, 1854, p. 490, (Amboina). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 1, 1859, p. 455 (Amboina). - KNER, Reise Novara, Fische, 1865, p. 80 (Nicobars). - GÜNTHER, Journ. Mus. Godeffroy, vol. 2-3, pts 5-6, 1874, p. 63 (Pelew Islands). - MARTENS, Preuss. Exped. Ost-Asien, 1876, p. 387 (Ternate). - BLEEKER, Atlas Ichth. Ind. Néerland., vol. 7, 1873-1876, pl. (33)311, fig. 3; vol. 8, 1876-1877, p. 116 (Amboina, Flores, Ceram). - SCHMELTZ, Cat. Mus. Godeffroy, No. 8, 1881, p. 5 (East Indies). - JORDAN and SEALE, Bull. Bur. Fisher., vol. 26, 1906(1907), p. 24 (Cavite). - JORDAN and RICHARDSON, Mem. Carnegie Mus., vol. 4, No. 4, 1909, p. 189 (Takao, Formosa). - SEALE, Philippine Journ. Sci., vol. 5, No. 4, Oct. 1910, p. 277 (Sandakan). - SNYDER, Proc. U.S. Nat. Mus., vol. 4, 1912, p. 500 (Okinawa). - WEBER, Siboga Exped., vol. 57, Fische, p. 288 (Malakia, Nusa Laut). - OSHIMA, Jap. Journ. Zool. Trans., Abstract, vol. 1, No. 5, March 31, 1927, p. 131 (compiled). - HERRE and MONTALBAN, Philippine Journ. Sci., vol. 33, No. 4, Aug. 1927, p. 404, pl. 2, fig. 1 (Orani, Tondo, Calapan, Bacon, Concepcion, Dipolog). - FOWLER, Mem. Bishop Mus., vol. 10, 1928, p. 216 (part; not Apia specimen). - X. SCHMIDT, Trans. Pacific Comm. Acad. Sci. U.S.S.R., vol. 1, 1930, p. 49 (Kominato, Riu Kiu).

Lethrinus jagorii PETERS, Monatsb. Akad. Wiss. Berlin, 1868, p. 257.

- (Paracali, Luzon). - BLEEKER, Nederland. Tijdschr. Dierk., vol. 4, 1874, p. 332 (compiled).

type locality:



1712  
A. N. S. P., 2 examples. Orani,  
Philippines. 1923. Rev. Joseph  
Clement. Purchased.

A. N. S. P., 3 examples. Orion,  
Philippines. 1923. Rev. Joseph  
Clement. Purchased.

A. N. S. P., one example. Philippines.  
1923. Rev. Joseph Clement. Purchased.



side mouth and premaxillary membranes scarlet. fins vermilion. 100000

Follow—Incl Caps

8 pt. Leaded

axil bright vermilion. [6344] Olivaceous above, dark silvery below and side more or less washed brassy with (6) transverse bronze orange bands. Supraorbital and suborbital regions somewhat crimson. Preopercle and opercular margins crimson. Head with yellowish shades below. Dorsal and caudal vermilion, other fins yellowish. Anal very pale orange terminally. Pectoral bright yellow.

15334, 20068. Port Palapag. June 3, 1909. Length, 212 to 258 mm.

7406, 7407. Port Uson, west of Pinas Island, Basucayne. December 17, 1908.

Length, 255 to 263 mm. Bronze red across preorbital. Bronze orange be-

hind eye, across tip of opercle and behind upper angle. More or less diffuse transverse lateral bars, only distinct posteriorly or as (2) on caudal peduncle and (1) below soft dorsal. Fins with vermilion shades.

8775. Quinalasag Island. June 12, 1909. Length, 270 mm.

7054. Romblon Harbor, Romblon. March 25, 1908. Length, 105 mm.

5588. San Miguel Harbor, Ticao Island. April 21, 1908. Length, 308 mm.

8705. San Miguel Island. June 4, 1909. Length, 288 mm.

12214, 12215, 14171. Santa Cruz Island, Marinduque. April 24, 1908. Length,

170 to 178 mm.

A639, A640. Simaluc Sibi Sibi Island, north of Tawi Tawi. September 23, 1909.

Length, 290 to 535 mm.

A545. Sulade Island. September 17, 1909. Length, 377 mm.

5724, 5725. Suragao, Mindanao. May 8, 1908. Length, 297 to 340 mm.

7843. Taganak Island, Jolo Sea. January 7, 1909. Length, 273 mm.

7356, 9518. Tara Island. December 15, 1908. Length, 133 to 275 mm.

4910. Tataan, Simaluc Island. February 19, 1908. Length, 280 mm.

4920. Tataan. February 20, 1908. Length, 254 mm.

5820. Tataidaga Point. May 15, 1908. Length, 244 mm.



Carangoides  
Caranx georgianus (Cuvier)

1713

Caranx georgianus Cuvier, Hist.  
Nat. Poiss., vol. 9, p. 85, 1833  
(March) (type locality, King  
George's Sound, Western  
Australia). — Jenyns, Voy. Beagle  
Fishes, p. 71, 1842 (King George's Sound). —  
Richardson, Voy. Erebus and Terror,  
Ichth., p. 135, pl. 58, figs. 1-3,  
1844 (New Zealand; Australia).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 440, 1860 (Raoul Island;  
North West Australia; Swan River).  
— Hector, Fishes of New Zealand, p. 16, 1872 (Auckland).

→ — McCulloch, Biol. Res. Endeavour,  
April 21,

vol. 3, <sup>pt. 3,</sup> p. 126, pl. 20, 1915 (Morton Bay;  
Lord Howe Island; Port Jackson; Adelaide; Fremantle).  
In Mem. Queensland Mus., vol. 5, pt. 2,  
1. <sup>Wait</sup> Wait, Rec. N. Austral. Mus., vol. 2, no. 1, p. 103, fig. 158, April 23, 1931. — McCulloch,  
p. 188, September 10, 1929 (reference);  
Roughley, Fishes of Australia, p. 95, pl. 29, 1916.



1<sup>2</sup>/<sub>5</sub> to 1<sup>3</sup>/<sub>4</sub>, first ray ends in short filament.

Largely uniform brown, above with olivaceous tinge, lower surface but slightly paler. Iris dull gray brown. Spinous dorsal with membranes dusky marginally. Axil and pectoral origin pale like rest of fin. Dorsals and caudal with membranes dark brown, fins otherwise pale and lower more or less whitish.

India, Andamans, East Indies,  
Philippines, China.



— Klunzinger, Arch. nat., vol. 38,  
pt. 1, p. 31, 1872 (Australia);

— Castelnau, Proc. Zool. Acclimat.  
Soc. Victoria, vol. 1, p. 117, 1872

(Melbourne Market). — Alleyne  
and Macleay, Proc. Linn. Soc. New  
South Wales, vol. 1, pt. 4, p. 327, 1877  
(Perry Islands). — Castelnau,

Proc. Linn. Soc. New South Wales,  
vol. 3, pp. 352, 364, 1879.

— Klunzinger, Sitzb. Akad. Wiss.  
Wien, math.-naturw. Kl., vol. 80, pt. 1, p.  
378, 1879 (1880) (Port Philip; King  
George's Sound). — Macleay, Proc.  
Linn. Soc. New South Wales, vol. 8, p.  
204, 1883.

— Johnston, Proc. Roy. Soc. Tasmania,  
pp. 85, 119, 1882 (1883). — Ogilby, Edible  
Fishes New South Wales, p. 80, pl. 24, 1893.

— Stead, Edible Fishes New South Wales,  
p. 87, pl. 57, 1908.



1 example. Port Balayan Bay,  
January 18, 1908. Length 35 mm.

23178. Port Banalucan, Marinduque  
Island. February 23, 1909. Length 49 mm.

23781. Port Dupon, Leyte Island.  
March 17, 1909. Length 51 mm.

10321 and 10503. Port Maricanan.  
July 21, 1908. Length 62 to 66 mm.

14469 and 15340. Port Palapag.  
June 2-3, 1909. Length 50 to 72 mm.

22866. Rapu Rapu Island. June 22,  
1909. Length 40 mm.

23476 to 23479. Tapanzana Island.  
September 13, 1909. Length 39 to 54 mm.

23904. Tataan Island, Tawi Tawi  
Group. February 21, 1908. Length 51 mm.

1 example. Tataan. February 20, 1908.  
Length 33 mm.

6144. Tonguil Island, east of Sumila  
Reef. September 14, 1909. Length 46 mm.



— Waite, Records Canterbury Mus.,  
vol. 1, no. 1, p. 23, April 25, 1907  
(reference).



25

21178. Catbalogan, Samar Island.  
April 15, 1908. Length 62 mm.

16652, 23366. Galera Bay, Mindoro.  
June 9, 1908. Length 55 to 59 mm.

23949. Isabel, Basilan Island,  
south of Zamboanga. September 11, 1909.  
Length 58 mm.

1 example. Ligo Point, Balayan Bay.  
January 18, 1908. Length 35 mm.

23916, 23917, 23933 to 23936 [1118].  
Limbones Cove, Luzon. February 8, 1909.  
Length 41 to 61 mm.

15662. Mactan Island, between Cebu  
and Bohol. March 25, 1909. Length 47 mm.

5736 and 5737. Mahinog, Camiguin  
Island, between Leyte and Mindanao.  
August 3, 1909. Length 52 to 57 mm.

15991. Maricaban Island. January  
20, 1908. Length 62 mm.



Caranx geobgianus Macleay,  
Proc. Linn. Soc. New South Wales,  
vol. 5, pt. 4, p. 533, 1881 (all  
Australian seas) (error).



3

4569 to 4571. Mompoy Island,  
Anabayan Islands. March 3, 1909.  
Length 45 to 50 mm.

24085 and 24086. North West Verde  
Island. July 22, 1908. Length 57 or 58 mm.

23225. Opol, Mindanao. August 4,  
1909. Length 51 mm.

23833. Pandanon Island, between  
Cebu and Bohol. March 23, 1909.  
Length 53 mm.

22028. Panpan Point, Tura Island,  
between Jolo and Tawi Tawi. September  
20, 1909. Length 63 mm.

21601. Pasacao, Ragay Gulf, Luzon.  
March 9, 1909. Length 58 mm.

23767. Pasacao River, Ragay Gulf.  
March 9, 1909. Length 50 mm.

24087 and 24088. Pollor, Mindanao.  
May 22, 1908. Length 40 to 47 mm.



1717

Usacaranx georgianus Whitley,  
Australian Zoologist, vol. 6, pt.  
4, p. 316, February 13, 1931  
(Albany, King George's Sound).

Scomber micans (Holander) Richardson,  
 Voy. Erabus and Terror, Ichth., p. 135,  
1844 (name in synonymy).

Caranx nobilis Macleay, Proc.  
Linn. Soc. New South Wales, vol. 5, pt.  
4, p. 532, 1882 (May 20, 1881) (type  
locality, Port Jackson).

Usacaranx nobilis Whitley,  
Australian Zool., vol. 6, pt. 4, p. 316,  
February 13, 1931 (type; Sans Souci,  
Botany Bay, New South Wales,  
Lord Howe Island).



predorsal to occiput and 13 to 20  
more forward to front of snout;  
10 principal rows across cheek;  
soft dorsal, anal and caudal sensely  
scaly. Scales with 9 or 10 basal  
radiating striae; 44 to 60 short,  
weak apical denticles, with 12 or 13  
transverse series of basal elements;  
circuli very fine.

D. XI, I, 23, I to 26, I, third spine  
 $1\frac{9}{10}$  to  $2\frac{1}{10}$  in head, first ray  $3\frac{1}{10}$  to  
 $3\frac{1}{5}$ ; A. II, 7, I, second spine  $3\frac{1}{3}$  to  
 $3\frac{2}{3}$ , slender, first ray  $2\frac{1}{5}$  to  $2\frac{1}{5}$ ;  
caudal  $1\frac{1}{4}$  to  $1\frac{2}{3}$ , obtusely angular  
behind, with infero median rays  
longest; least depth of caudal peduncle  
 $3\frac{1}{4}$ ; pectoral  $1\frac{1}{3}$  to  $1\frac{2}{5}$ ; ventral



Usacaranx georgianus wrighti  
Whitley, Australian Zoologist,  
vol. 6, pt. 4, p. 317, Feb. 13, 1931.  
(type locality, 40 miles west of  
Kingston, South Australia, in  
30 fathoms).



4641.

~~18908, 24066 and 24067.~~ Tonguil  
Island, Tambun Vigumbul.

September 14, 1909. Length 55 mm.

23513. Tulayan Island, vicinity  
Jolo. September 15, 1909. Length 66 mm.

18908, 24066 and 24067. Tunalutan  
Island, east of Zamboanga. September  
9, 1909. Length 53 to 56 mm.

23169, 23170, 24017. Tutu Bay,  
Jolo Island, first anchorage. September  
19, 1909. Length 50 to 62 mm.

7784, 23746 to 23749, 23962 to 23964.

Danawan and Si Amil Islands, vicinity  
Sibubo Bay, Borneo. September 27, 1909.  
Length 47 to 60 mm. 12 examples.

8891 to 8899. Mabul Island, Sibubo  
Bay, Borneo. September 29, 1909. Length  
23 to 63 mm. ~~length~~ 13 examples.



Depth  $2\frac{3}{4}$  to  $2\frac{4}{5}$ ; head 3 to  $3\frac{1}{8}$ , width 2 to  $2\frac{2}{3}$ . Snout  $2\frac{2}{3}$  to  $2\frac{3}{4}$  in head; eye 5 to  $5\frac{1}{6}$ ,  $1\frac{3}{5}$  to 2 in snout, 1 to  $1\frac{4}{5}$  in interorbital, without adipose lids; maxillary reaches to or  $\frac{4}{5}$  to eye, expansion  $1\frac{2}{3}$  to  $1\frac{7}{8}$  in eye, length  $2\frac{7}{8}$  to 3 in head; interorbital 3 to  $3\frac{2}{3}$ , convexly elevated. Gill rakers 11 + 22, lanceolate, equal gill filaments or  $1\frac{1}{5}$  in eye.

Scales 40 to 53 + 30 or 31 in lateral line, straight section  $1\frac{3}{5}$  in arch; 19 or 20 scales above arch of lateral line to soft dorsal origin, 29 to 30 below. Breast entirely scaled.

D. VIII — I, 26, I to I, 28, I, third spine 2 to  $2\frac{2}{5}$  in head, first branched ray  $2\frac{1}{8}$  to  $2\frac{2}{3}$ , last



ray semi-detached;  $\text{A. } \underline{\text{II}} - \underline{\text{I}}, 2, \underline{\text{I}}$   
 or  $\underline{\text{I}}, 2, 2, \underline{\text{I}}$ , first ray  $2\frac{1}{2}$  to 3, last  
 ray semi-detached; caudal  $1\frac{1}{8}$   
 to  $1\frac{1}{2}$ , deeply forked; least  
 depth of caudal peduncle 7 to  $7\frac{1}{2}$ ;  
 ventral 2 to  $2\frac{1}{8}$ , rays  $\underline{\text{I}}, 5$ ;  
 pectoral rays  $\underline{\text{II}}, 17$  or  $18$ , fin  
 $2\frac{3}{4}$  to  $3\frac{7}{8}$  in fish without  
 caudal.

Brown above, sides and  
 below silvery white. Black  
 blotch on opercle little smaller  
 than eye. Dorsals and caudal  
 brownish, other fins pale.

North western Australia, Western  
 Australia, Queensland, New South  
 Wales, Victoria, Tasmania, South  
 Australia, New Zealand, East  
 Indies, Lord Howe Island, Norfolk  
 Island, Kermadecs, Juan Fernandez.



U. S. N. M., no. 28672. Australia. <sup>174</sup>  
D. G. Stead. Length 295 mm.

U. S. N. M., no. 47952. South  
Australia. Australian Museum.  
Length 357 mm. Malformed lower  
jaw short, so snout protrudes.  
V. cutes 38. Straight section of lateral  
line  $1\frac{1}{8}$  in arch. D. VIII - II, 28.

U. S. N. M., no. 58868. Australia.  
D. G. Stead. Length 358 mm.

U. S. N. M., no. 59867. New South  
Wales. D. G. Stead. Length 175 to 193 mm.  
Four examples.

U. S. N. M., no. 59952. New South  
Wales. D. G. Stead. Length 69 to 95 mm.  
Six examples.



Verlagen Akad. Wet. Amsterdam,  
vol. 15, 1863, p. 446 (Port Jackson).

→ Canestrini, Arch. Zool. Anat. Fisiol.

Genova, ser. 2, vol. 1, 1869, p. 151 (Australia).

→ Klunzinger, Sitz. Ber. Akad. Wiss. Wien,

Math.-naturw. Classe, vol. 80, pt. 1, 1879, p.

347 (Port Philip, Hobson Bay, King George's

Sound). Macleay, Proc. Linn. Soc. New

South Wales, vol. 5, 1881, p. 350 (West

and South Australia, Victoria, New South

Wales?). McCoy, Prodr. Zool. Victoria,

dec. 19, 1889, pl. 184 (belly wrongly colored).

Stead, Fishes of Australia, 1906, p. 117.

Waite, Records South Austral. Mus.,

vol. 2, no. 1, April 23, 1920, p. 105, fig. 161.



1722

Carangoides ophthalmotaenia Bleeker

Carangoides ophthalmotaenia Bleeker,  
Nat. Tijds. Ned. Indie, vol. 3, p.  
270, 1852 (type locality, Amboina);  
Verh. Batavia Genoots. (Maatsch.),  
vol. 24, p. 90, 1852 (copied).

Caranx ophthalmotaenia Evermann  
and Seale, Bull. Bur. Fisher.,  
vol. 26, p. 64, 1906 (Philippines).  
Günther, Cat. Fish. Brit. Mus., vol. 2,  
p. 451, 1860 (copied).

Caranx (Carangoides) ophthalmo-  
taenia Weber and Beaufort, Fishes  
Indo Austral. Archip., vol. 6, p.  
230, 1931 (Saleyer).



anterior or middle of caudal peduncle. Round orange spots on cheek and opercle. Front of upper jaw bluish, continued as line to lower front of eye and narrow brown line above. Iris with bright sapphire shades. First dorsal with yellowish shades, membranes almost lemon; spines gray. Second dorsal washed with greenish yellow. Anal pale, washed with dull cadmium, narrow bluish white subbasal bar contrasts with brighter cadmium basal bar. Pectoral pink. Ventral yellowish, tip of first ray pink.

15014, 23148 and 23149, 23301 to 23303. Makesei Island, Palawan. April 5, 1909. Length 54 to 92 mm.



Citula ophthalmotaenia Bleeker,  
Verslag. Kon. Akad. Wet.  
Amsterdam, vol. 16, p. 360, 1864.



17334 and 17349. Isabel Channel, Basilan  
Island. September 11, 1909. Length 100 mm.

5317 to 5325 [412, 413]. Zolo. March 6,  
1908. Length 101 to 120 mm. General color  
pearl gray, washed with yellowish on  
breast and back somewhat dusky. Top  
of head smoky. Median longitudinal  
indistinct dusky stripe, showing somewhat  
brownish posteriorly on caudal peduncle.  
Narrow orange brown line around dorsal,  
forward till between eyes where reddish  
brown. Second line begins behind snout  
tip passes above eye as red brown line,  
breaks into series of orange spots  
beginning on shoulder; these fuse more  
or less posteriorly and vanish about



Depth  $2\frac{1}{2}$  to  $2\frac{3}{5}$ ; head 4, rostro-frontal profile decilvous in nearly straight line. Snout not or almost not longer than eye; eye 3 to  $3\frac{1}{3}$  in head, more than half a diameter from frontal profile; upper jaw shorter than lower, strongly protractile, ends below front border of eye; teeth in jaws conspicuous.

Cheeks, top of opercle and lateral thoracal triangle scaly above, inferiorly and on inferior (ventral) triangle naked.

Lateral line till below second third of soft dorsal curved (arch broadly open), straight section with 35 scutes, widest 16 in body depth.



D. I, VIII, I, 27 or 28, spinous  
 fin  $3\frac{1}{2}$  in body depth, soft  
 fin with first ray extended  
 until slightly less than body  
 depth; A. IV, I, 23, twice lower,  
 spines subequal; caudal lobes  
 equal,  $4\frac{1}{3}$  to  $4\frac{1}{2}$  in fish; pectoral  
 falcate, almost or not shorter  
 than head; ventrals twice shorter  
 than head.

Greenish above, silvery below,  
 ocular dorsal brown band.

Fins yellow. Length 126 mm.

(Weber and Beaufort.)

East Indies, Philippines. A  
 doubtful species based on  
 immature material.



1726

Carangoides emburyi (Whitley)

Turrun emburyi Whitley, Rec.  
Austral. Mus., vol. 18, no. 16, p. 337,  
pl. 38, fig. 4 (photograph), April  
20, 1932 (North-west Islet,  
Queensland).



1080

8098. Alimango Bay, Burias Island.  
March 5, 1909. Length 284 mm. Lower  
gill rakers 17.

6793. Bolinao Bay, Luzon. May 10,  
1909. Length 245 mm. Lower gill rakers  
19.

A575, A576. Busbus Point, Siasi Island,  
between Jolo and Tawi Tawi. September 20,  
1909. Length 242 to 295 mm. Lower  
gill rakers 18 or 19.

20107. Cagayan, Sulu Island. January  
8, 1909. Length 116 to 127 mm. 2 examples.

[1076] Dusky band not present. Yellow band from  
behind eye to caudal base.

12355, 12356, 17411 to 17415. Candaraman  
Island. January 4, 1909. Length 130 to 218  
mm. Lower gill rakers sometimes 17.

22750. Capunpungan Point, Generale  
Island, east coast Mindanao. May 9,  
1908. Length 95 mm.



Depth  $3\frac{1}{4}$ ; head 4. Snout  $2\frac{1}{8}$  in head; eye 2 in snout,  $1\frac{1}{2}$  diameters from upper profile, over 2 in preorbital; maxillary not quite reaching eye, length  $2\frac{1}{4}$  in head; band of villiform teeth in each jaw, vomer and palatines; interorbital high. Lower gill rakers 15.

Breast naked back behind ventrals, scales invading naked area between pectorals and ventrals. Arch and straight section of lateral line equal, latter with 40 scutes, very small anteriorly. Soft dorsal and anal with low basal scaly sheaths.

D. VIII - I, 29, front lobe of soft dorsal low; A. II - I, 24, soft fin like soft dorsal; caudal



forked; pectoral rays 21, falciform, slightly longer than head; ventral rays I, 5.

Opalescent bluish above, with few yellow spots on upper parts of sides, light silvery below.

Fins smoky olive. Small black opercular blotch and broken line of dark brown marks along anal base. Pectoral axil black.

Length 800 mm. (Whitley.)

Queensland.



1729

Carangoides ferdau (Forskål)

Scomber ferdau Forskål, Descript.  
Animal., pp. 12, 55, 1775 (type  
locality, Djedda, Red Sea). —  
Bonnaterre, Tabl. Ichth., p. 141, 1788  
(copied). — Gmelin, Syst. Nat.  
Linna., pt. 1, p. 1338, 1789 (copied).  
— Walbaum, Artedi Pisc., vol. 3, p.  
219, 1792 (copied)

Caranx ferdau Lacépède, Hist. Nat.  
Poiss., vol. 3, pp. 59, 75, 1802 (Red  
Sea).



Snout and upper lip brown. Iris white, slate in formaline specimens. Dorsals pale or whitish, spinous fin terminally dusky, blackish in young; each membrane with dusky or blackish subbasal blotch, usually just above line of basal scaly sheath.

East Indies, Siam, Philippines, Micronesia, Polynesia.



— Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 439, 1860 (part).

— Schmeltz, Cat. Mus. Godeffroy, no. 4, p.  
17, 1869 (Fiji).

— Klunzinger, Verh. zool. bot. Gesell.  
Wien, vol. 21, p. 462, 1872 (Red Sea).

— Günther, Journ. Mus. Godeffroy, vol. 5, pt. 11,  
p. 134, pls. 87-88, 1876 (Tahiti; Bonfin Islands; Hawaii).

— Day, Fishes of India, pt. 2, p. 217,  
1876; Fauna British India, Fishes,  
vol. 2, p. 156, 1889.

— Sauvage, Hist. Madagascar, Poiss.,  
p. 330 (518) 1891.



16289 and 16290. Alibijaban Island,  
Ragay Gulf, Luzon. March 6, 1909.  
Length 92 to 96 mm.

23377. Alimango, Burias Island.  
March 5, 1909. Length 54 mm.

23490. Balikias Bay, Lubang Island.  
July 14, 1909. Length 97 mm.

15080 and 15089. Capulaan Bay,  
Pagbilao, Chica Island. February 24, 1909.  
Length 96 to 105 mm.

~~15866 and 23958.~~  
~~Danawan and Si Unil Islands.~~  
~~September 26, 1909. Length 79 to 90 mm.~~  
~~23384 and 23744. Danawan and Si~~  
~~Unil Islands. September 27, 1909.~~  
~~Length 80 to 86 mm.~~



— Steindachner, Denks. Akad. Wiss. Wien,  
 Math.-naturh. Kl., vol. 70, p. 495, 1900  
 (Honolulu).

— Jordan and Seale, Bull. Bur. Fisher.,  
 vol. 25, p. 232, 1905 (1906) (Samoa).

— Kendall and Goldsborough, Mem. Mus.  
 Comp. Zool., vol. 26, p. 269, 1911 (Makemo,  
 Paumotu).

— McCulloch, Biol. Res. Endeavour,  
 vol. 3, pt. 3, p. 125, April 21, 1915  
 (Norfolk Island; Lord Howe Island;  
 mainly near Sydney).

Caranx ferdan Weber, Siboga Exped.,  
 vol. 57, Fische, p. 399, 1913 (Lirung,  
 Salibabu) (error).



322  
paler and subbasal dusky longitudinal  
band more contrasted. Pectoral pale  
or whitish. Ventral with front portion  
broadly brownish dusky, rest whitish.

Natal, East Indies, Philippines, Formosa.



Caranx (Carangoides) ferdau Klunzinger,  
Fische Roth. Meer., vol. 1, p. 99, 1884.

— Wakuiya, Ann. Carnegie Mus., vol. 15,  
p. 165, pl. 19, fig. 2, 1924 (Ryubaru).

— Weber and Beaufort, Fishes Indo-  
Austral. Archip., vol. 6, p. 228, 1931  
(Salibabu material).



373

Depth  $2\frac{7}{8}$  to 3; head  $2\frac{2}{5}$  to  $2\frac{2}{3}$ , width  $2\frac{1}{8}$  to  $2\frac{1}{5}$ . Snout  $3\frac{7}{8}$  to 4 in head; eye 3 to  $3\frac{1}{3}$ , greater than snout or interorbital; maxillary reaches  $\frac{2}{5}$  in eye, expansion  $2\frac{3}{5}$  to 3, length  $2\frac{1}{3}$  to  $2\frac{2}{5}$  in head; teeth villiform, in bands in jaws, on vomer and palatines; interorbital  $5\frac{1}{4}$  to  $6\frac{1}{2}$ , nearly level; infraorbital and preopercle edges and ridge of latter, denticulated. Gill rakers 4 + 12, lanceolate, equal gill filaments or  $\frac{1}{3}$  of eye.

Scales 23 or 24 in lateral line to caudal base and 3 to 5 more on latter, 2 above, 6 below, 4 predorsal, 2 rows on cheek; head naked, except cheeks and opercles, Tubercles in lateral line moderate, well



Carangoides lerdau jenkins,  
Bull. U. S. Fish Comm., vol. 22, p.  
446, 1902 (1903) (Honolulu). —

Jordan and Evermann, Bull. U. S.  
Fish Comm., vol. 23, pt. 1, p. 198,  
fig. 77, 1903 (1905) (Honolulu;  
Kailua; Samoa). — Fowler, Bull.  
Bishop Mus., no. 22, p. 8, 1925  
(Guam). — Fowler and Ball,  
Bull. Bishop Mus., no. 26, p. 12,  
1925 (Wake Island). — Fowler,  
Proc. Acad. Nat. Sci. Philadelphia  
vol. 79, 1927, p. 272 (Orion; Philippines;  
Mem. Bishop Mus., vol. 10, p. 150,  
1928 (Honolulu; Wake Island;  
Makemo Pass; Society Islands);  
vol. 11, no. 5, p. 326, 1931 (reference);  
Proc. Acad. Nat. Sci. Philadelphia,  
vol. 86, p. 447, fig. 28, 1934 (Durban,  
 Natal).



predorsal forward opposite front eye edge and premaxillary groove broadly naked; 3 rows on cheek to preopercle ridge. Scales with 4 to 10 basal radiating striae also many as 7 incomplete auxiliaries; fine circuli very largely parallel and vertical.

D. IX, 10, I, third spine  $1\frac{2}{5}$  to  $1\frac{3}{5}$  in head, first ray  $2\frac{4}{5}$  to 3; A. III, 7, I, third spine  $2\frac{1}{4}$  to 3, first ray  $2\frac{4}{5}$  to 3; least depth of caudal peduncle  $2\frac{7}{8}$  to 3; ventral  $1\frac{1}{3}$  to  $1\frac{1}{2}$ ; pectoral  $3\frac{1}{4}$  to  $3\frac{1}{3}$  in combined head and trunk to caudal base; upper caudal lobe  $3\frac{1}{5}$  to  $3\frac{2}{5}$ .

Pale olive or brownish on back, sides and lower surfaces white, everywhere with bright silvery white reflections. Young with variable dark blotches on back and sides above.



Scomber ferdan bayad Forsk.,  
 Descript. Animal., pp. 12, 55, 1775  
 (type locality, Arabia). —  
Walbaum, Artedi Pisc., vol. 3, p. 220,  
 1792 (copied).

Caranx bayad Rüppell, Atlas Reise  
 nördl. Afrika, Fische, p. 98, pl. 25,  
 fig. 5, 1828 (Red Sea). — Günther,  
 Cat. Fish. Brit. Mus., vol. 2, p. 438,  
 1860 (compiled). — Playfair, Fishes  
 of Zanzibar, p. 60, 1866 (Seychelles).

Citula bayad Bleeker, Rech. Faune  
 Madagascar, pt. 4, p. 99, 1874  
 (reference).



Amia exostigma Jordan and Seale

Amia exostigma (Jordan and Starbuck) Jordan  
and Seale, Bull. Bur. Fisher., vol. 25,  
1905, p. 238, fig. 31. Apia and Pago Pago,  
Samoa. — Fowler, Copeia, no. 58, June 18,  
1918, p. 63 (Philippines); Proc. Acad. Nat.  
Sci. Phila., 1927, p. 274 (Philippines).



Scomber fulvoguttatus Forskål,  
descript. Animal., pp. 12, 56, 1775  
(type locality, Arabia). —  
Bonnaterre, Tabl. Ichth., p. 142,  
1788 (copied). — Gmelin, Syst.  
Nat. Linn., pt. 1, p. 1332, 1789 (copied).  
— Walbaum, Arted. Pisc., vol. 3,  
p. 220, 1792 (copied).



23469. Maitara Island. November 26,  
1909. Length 83 mm.

<sup>23522,</sup>  
23523 to 23526, 23879 to 23882, 12943.

Tidore Island, south of Ternate.

November 25, 1909. Length 68 to 116 mm.

11160 Nan Wan Bay, Formosa. January  
25, 1910. Length 122 mm!



Caranx fulvoguttatus Rüppell,  
Atlas Reise nördl. Afrika, Fische,  
p. 100, pl. 25, fig. 7, 1828 (Red Sea).  
— Cuvier, Hist. Nat. Poiss., vol. 9, p.  
75, 1833 (Seychelles). — Günther,  
Cat. Fish. Brit. Mus., vol. 2, p.  
439, 1860 (compiled). — Klunzinger,  
Verh. zool. bot. Gesell. Wien, vol.  
21, p. 460, 1871 (Red Sea). —  
Sauvage, Hist. Madagascar, Poiss.,  
p. 518, 1891 (reference).



1 example. Simulac Bisibisi Island, north of Tawi Tawi. September 22, 1909. Length 69 mm. with isopod crustacean on left preopercal. 17981. Simulac Bisibisi Island,

north of Tawi Tawi. September 23, 1909. Length 66 mm.

23351 and 23352. Southern Lagoon, Taminiao Reef, Sulu Archipelago.

February 26, 1908. Length 62 mm.

D. 5146. Sulade Island, N. 18° W.,

3.40 miles (5° 46' 40" N. 120° 48' 50" E.).

February 16, 1908. Length 62 mm.

20718. Tambul Sigumbul, Tiguil Island, September 14, 1909. Length 100 mm. 23871 to 23874 [15-3]. Tataan, Simulac

Island, Sulu Archipelago. February

19, 1908. Length 61 to 90 mm. Yellowish

and pearl gray. Median brown

orange-occipital line, divides and

surrounds dorsal. Another line of

same shade begins at snout, passes



Caranx (Carangoides) fulvoguttatus  
Klunzinger, Fische Roth. Meer.,  
vol. 1, p. 98, pl. 12, fig. 4, 1884  
(Red Sea). — Weber and Beaufort,  
Fishes Indo Austral. Archip., vol.  
6, p. 227, 1931 (compiled).



with purplish shades. First and second dorsal spines iridescent, second membrane yellowish, with black blotch at tip. Second dorsal spines all iridescent, fin orange terminally. Anal and ventral like dorsal. Caudal orange. Pectoral hyaline pink.

36 examples. Reefs of South Lagoon, Taminiao, Sulu Archipelago. February 26, 1908. Length 51 to 101 mm.

6400. Rasa Island, Mantaguin Bay, Palawan. April 1, 1909. 4 examples. Length 64 to 69 mm.

18641. Saborn Island, Ragay Gulf, Luzon. March 10, 1909. Length 97 mm.



Caranxoides fulvoguttatus  
- Bleeker, Nat. Tijds. Ned. Indie,  
vol. 2, p. 178, 1851 (Batavia); Verh.  
Batavia. Genoot. (Natuurk.), vol.  
24, p. 89, 1852 (Batavia).



November 10, 1909. Length 54 to 62 mm.  
23452 to 23455. Kink Strait, Collier.  
Length 56 mm.  
Bust of Gurni, Collier. November 16, 1909.  
23396. Rodolfo and Cayojo Islands.  
December 29, 1909. Length 55 mm.  
16229. Cape Rat, Liliua Bay, Collier.

3 to  $3\frac{1}{6}$ , subequal with or little longer than snout, little greater than interorbital in young to subequal with age; maxillary reaches  $\frac{1}{2}$  to  $\frac{1}{5}$  in eye, expansion  $2\frac{1}{5}$  to 3 in eye, length  $2\frac{2}{5}$  to 3 in head; teeth fine, villiform, in bands in ... snout 5 to 15 in head; eye 4 to  $4\frac{2}{3}$ ,  $1\frac{3}{4}$  in snout,  $1\frac{1}{5}$  in interorbital; maxillary reaches  $\frac{1}{2}$  in eye, expansion  $1\frac{4}{5}$  in eye, length  $2\frac{1}{3}$  to  $2\frac{1}{5}$  in head; teeth above minutely triserial, outer row



Caranx auroguttatus (Ehrenberg)  
Cuvier, Hist. nat. Poiss., vol. 9, p. 71,  
 1833 (type locality, Red Sea). —  
Rüppell, Samml. Senckenberg.  
 Mus., p. 13, 1852.

Caranx (Carangoides) auroguttatus  
Klunzinger, Fische Roth. Meer., vol.  
 1, p. 98, 1884 (note). — Weber and  
Beaufort, Fishes Indo-Austral.  
 Archip., vol. 6, p. 225, 1913 (compiled).



24038 and 24039 [919]. Port Usow,  
west of Pinas Island. Length 87 to 88  
mm. Translucent gray, belly with  
white shades. Top of head dusky.  
Side iridescent pink, with longi-  
tudinal bronze lines through nape  
and dividing around dorsals, almost  
obsolete on caudal peduncle. Bronze  
line begins at snout, horizontal till  
beyond dorsals; another through eye  
and middle of side, ending as 3  
yellow dots on caudal peduncle,  
also small black basal caudal blotch  
just above. About 5 bronze orange  
blotches on opercle, 2 on cheek and  
third on interopercle. Iris often



Carangoides saureoguttatus  
Bleeker, Nat. Tijds. Ned. Indië,  
 vol. 4, p. 470, 1853; vol. 6, p. 175,  
 1854; Verslag. Kon. Akad. Wet.  
 Amsterdam, vol. 12, p. 53, 1861.

Caranx immaculatus (Ehrenberg)  
Cuvier, Hist. Nat. Poiss., vol. 9, p. 71,  
 1833 (name in text).



24041  
1857<sup>1</sup>/<sub>1</sub> and 24042. Malanipa Island,  
east of Zamboanga. September 8, 1909.  
Length 66 to 71 mm.

17133. Murciélagos Bay, Mindanao.  
August 20, 1909. Length 107 mm.

17649, 23822 to 23824. Pandanon Island.  
March 23, 1909. Length 102 to 107 mm.

15946 and 15947. Pangasinan Island,  
vicinity of Jolo. February 13, 1908.  
Length 57 to 68 mm.

11 examples. Pangasinan Island.  
February 13, 1908. Length 62 to 72 mm.

23253. Port Ciego, Balabac. January 3,  
1909. Length 77 mm.

17167. Port Matalvi, western Luzon.  
November 23, 1908. Length 67 mm.



? Caranx sestus Richardson,  
Ichth. China and Japan, p. 274,  
1846 (type locality, China Sea;  
Canton). — Bleeker, Ned. Tijds.  
dierk., vol. 4, p. 131, 1873 (1874).  
(reference).



Follow — In Caps  
Loaded

Scales 47 in lateral line to caudal base; 6 above, 14 below; pre-dorsal scales forward opposite eye; head naked except opercle and 2 patches of scales behind eye, one above preopercle and other on side of nape.

for list  
D. X, 9, third spine 3 in head, third ray  $2\frac{7}{8}$ ; A, III, 8, third spine  $3\frac{1}{2}$ , first ray 3; caudal  $1\frac{1}{4}$ , deeply emarginate; least depth of caudal peduncle 3; pectoral 1; ventral  $1\frac{2}{5}$ .

Yellow in life, with slight wash of grayish. In alcohol whitish, slightly grayish drab above; middle of each row of scales darker, as 4 or 5 narrow longitudinal lines above lateral line parallel with back. Large, rather indistinct oblong dusky blotch between pectoral and lateral line. Breast and upper pectoral axil grayish. Fins immaculate in life, except dusky tips of ventrals and caudal washed yellow. In alcohol fins white, upper surface of first pectoral ray gray and ventral dusky on terminal third. Length, 220 mm.

(Seale) 9

The above from the type, apparently differing from Lethrinus harak (Forsk.) in the more advanced dark lateral blotch above the middle of the pectoral fin. Lethrinus hypslopterus is also very similar except for the higher soft anal, which high as long. Seale gives the type No. 5080 taken at Balabac Island, August 6, 1908, as 220 mm. long, his figure measuring 190 mm. Herre and Montalban who later redescribe this specimen, say "it measures 177 mm. in length".



Carangoides hemigymnostethus

Bleeker, Nat. Tijds. Ned. Indië,  
vol. 1, p. 364, 1850 (type locality;  
Batavia, Java); Verh. Batavia.  
Genoot. (Makreel), vol. 24, p. 61,  
1852 (copied). — Oshima, Philippine  
Journ. Sci., vol. 26, no. 3, p. 388, March  
1925 (Taichow, Formosa).

Citula hemigymnostethus Bleeker,  
Nederl. Tijds. Dierk., vol. 1, p. 235  
1863 (reference).

Caranx magog Thiollière, Fauna  
Woodlark, p. 174, 1857 (type  
locality, Woodlark Island).



Length 60 to 93 mm.

15206, 15665, 19818. Mactan Island,  
between Cebu and Bohol. March 25, 1909.

Length 100 to 105 mm.

2 examples. Magnas, Lagonoy Gulf,  
east coast of Luzon. June 17, 1909.

Length 110 to 112 mm.

16145 and 16146. Mahinog, Camiguin  
Island. April 3, 1909. Length 111 to 121 mm.

15013 and 15015. Makesei Island,  
eastern Palawan. April 5, 1909.

Length 98 to 111 mm.

26, 6198, 20029 to 20032. Malapascua  
Island, north of Cebu. March 16, 1909.

Length 94 to 111 mm.



Caranx venator Playfair, Proc.  
Zool. Soc. London, p. 859, fig. 2,  
1867 (type locality, Seychelles).



— Regan, Journ. Bombay Nat. Hist. Soc.,  
vol. 16, no. 2, 1905, p. 330 (Persian Gulf).  
— Weber, Siboga Exped., vol. <sup>57, Riche,</sup> 65, 1913, p.  
226 (Menado; Saleyer; Timor; Java  
Sea). — Barnard, Ann. South Afr. Mus., vol. 21, 1927,  
p. 519 (Mozambique).  
Alpogon 4-fasciatus Gorgoza, Ann. Soc.  
Españ. Hist. Nat. Madrid, vol. 17, 1888,  
p. 283 (Manila Bay).  
Amia quadrifasciata Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 7, 1873-76, p. 88  
(Singapore, Pinang, Banka, Java, Celebes);  
vol. 8, 1876-77, pl. (57) 335, fig. 1. —  
Jordan and Seale, Bull. Bur. Fisher., vol. 26,  
1906 (1907), p. 16 (Cavite). — Evermann and  
Seale, Bull. Bur. Fisher., vol. 26, 1906 (1907),  
p. 71 (Jolo). — Jordan and Richardson, Bull.  
Bur. Fisher., vol. 27, 1907 (1908), p. 254  
(Manila); Mem. Carnegie Mus., vol. 6, no. 4,  
1909, p. 181 (Sabao). — <sup>— Seale, Philippine Journ. Sci., vol. 5, no. 4, 1910, p. 274 (Mindanao, Borneo).</sup>  
Mc Culloch, Biol.  
Res. Endeavour, vol. 3, pt. 3, 1915, p. 120



Caranx bleekeri Klunzinger,  
Verh. zool. bot. Gesell. Wien, vol. 21,  
p. 461, 1871 (type locality, Red Sea).  
— Picaglia, Atti Soc. Modena,  
ser. 3, vol. 13, p. 31, 1894.  
— Bamber, Journ. Linn. Soc. London,  
vol. 31, p. 480, 1915.



and well exposed, each with crimped  
basal scale, <sup>scales with</sup> 13 to 21 basal radiating  
striae; 93 to 112, <sup>apical denticles,</sup> with 1 to 7 transverse  
series of basal elements; ~~an~~ circuli fine.

D. VII - I, 9, I, third spine  $1\frac{2}{3}$  to  $1\frac{7}{8}$   
in total head length, second ray  $1\frac{1}{2}$  to  
 $1\frac{3}{5}$ ; A. II, 8, I, second spine  $2\frac{7}{8}$  to 3,  
first ray  $1\frac{2}{3}$  to  $1\frac{3}{4}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{4}$ ,  
moderately emarginate behind; least  
depth of caudal peduncle  $2\frac{1}{4}$  to  $2\frac{2}{5}$ ;  
pectoral  $1\frac{2}{5}$  to  $1\frac{1}{2}$ ; ventral  $1\frac{1}{2}$  to  $1\frac{2}{3}$ .

Brown generally, little paler  
below. On back and sides above  
each scale more or less edged with  
darker brown to form reticulated  
pattern. Diffuse dark brown band,  
at first narrow along side of snout  
and through eye, broadens on  
costal region to about  $\frac{2}{3}$  diameter



Caranx laticaudis Alleyne and  
Macleay, Proc. Linn. Soc. New South  
 Wales, vol. 1, pt. 4, p. 325, pl. 10, fig. 2,  
 March 1877 (type locality, Hall  
 Sound, near Gule Island, Papua).  
 — McCulloch, Mem. Queensland  
 Mus., vol. 8, pt. 1, p. 74, pl. 12, Jan.  
 30, 1924 (type); ~~Mem. Austral.~~  
~~Mus., no. 5, pt. 1, p.~~

Caranx gilberti Jordan and Seale,  
 Bull. Bur. Fisher., vol. 25, p. 234,  
 fig. 29, 1905 (1906) (type locality,  
 Pago Pago, Samoa).



Depth  $2\frac{4}{5}$  to 3; head  $2\frac{1}{2}$  to  $2\frac{3}{5}$ , width 2 to  $2\frac{1}{5}$ . Snout 4 to  $4\frac{1}{2}$  in head from snout tip; eye  $2\frac{3}{4}$  to  $3\frac{1}{5}$ , greatly exceeding snout or interorbital; maxillary reaches  $\frac{3}{4}$  to  $\frac{4}{5}$  in eye, expansion 2 to  $2\frac{1}{4}$ , length 2 to  $2\frac{1}{8}$  in head; teeth villiform, in narrow bands in jaws, on vomer and palatines; interorbital 5 to  $5\frac{1}{2}$ , very slightly convex; preopercle ridge entire, edge minutely serrate. Gill rakers 6 + 14, lanceolate, twice gill filaments or 2 in eye.

Scales 24 in lateral line to caudal base and 4 more on latter, 2 above, 6 below, 3 predorsal, 2 or 3 rows on cheek to preopercle angle; muzzle, including suborbitals, maxillary and interorbital, naked; 12 to 15 basal radiating striae, 70 to 92 apical denticles,



Carangoides jordani Nichols,  
 Amer. Mus. Novit., no. 50, p. 2,  
 October 24, 1922 (type locality,  
 Hawaiian Islands). — Jordan  
 and Jordan, Mem. Carnegie Mus.,  
 vol. 10, no. 1, p. 40, December 1922  
 (Honolulu). — E. K. Jordan, Proc. U. S.  
 Nat. Mus., vol. 66, art. 33, p. 16, 1924 (Honolulu).

Ferdania jordani Jordan,  
Evermann, Tanaka, Proc. Cal.  
 Acad. Sci., ser. 4, vol. 16, p. 662,  
 November 14, 1927 (Honolulu).

Caranx jordani McCulloch, Austral.  
 Mus. Mem., no. 5, pt. 1, p. 187, Sep. 10,  
 1929 (reference).



8 pt. L...  
434789  
60  
Lethrinus frenatus Valenciennes 434789

Lethrinus frenatus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1839, pp. 291, 293, <sup>1839</sup> Ceylon. - SAUVAGE, Hist. Nat. Madagascar, Poiss., <sup>1891</sup> 1891, p. 200, pl. 21, fig. 1 (type).

? Lethrinus maculatus VALENCIENNES, Hist. Nat. Poiss., vol. 6, <sup>1830</sup> 1830, p. 292, <sup>1830</sup> Pondicherry.

Lethrinus cinereus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 293, <sup>1830</sup> (Kaiiz, Ceylon). - DAY, Fishes of India, pt. 1, 1875, p. 135 (Madras); Fauna Brit. India, Fishes, vol. 2, 1889, p. 38. - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1927, p. 282 (Orani, Orion, Calapan, Bacon).

? Lethrinus erythracanthus VALENCIENNES, Hist. Nat. Poiss., vol. 6, <sup>1830</sup> 1830, p. 314, <sup>1830</sup> (Luganor, Mariannes).

Lethrinus anatarus RICHARDSON, Zool. Voy. Sulphur, Fishes, 1844, p. 145, (Canton); Ichth. China, Japan, 1846, p. 242 (Sea of China; Canton).

Lethrinus richardsonii GÜNTHER, Cat. Fish. Brit. Mus., vol. 1, 1859, p. 456, <sup>1859</sup> China Sea and Hong Kong. - SCHMELTZ, Cat. Mus. Godeffroy, No. 7, 1881, p. 5 (China); Ann. Mag. Nat. Hist., ser. 3, vol. 20, 1867, p. 59 (China, Cape York). - ISHIKAWA and MATSUURA, Prelim. Cat. Fishes Mus. Tokyo, 1897, p. 53. - RUTTER, Proc. Acad. Nat. Sci. Philadelphia, 1897, p. 76 (compiled). - SMITH and POPE, Proc. U.S. Nat. Mus., vol. 31, <sup>1906</sup> 1906, p. 477 (Susaki).

Lethrinus richardsoni KLUMZINGER, Sitz. Ber. Akad. Wiss. Wien, Math.-Nat. Kl., vol. 80, pt. 1, 1879, p. 357 (Endeavour River, Port Darwin). - SAUVAGE, Bull. Soc. Philom. Paris, ser. 7, vol. 5, 1881, p. 105 (Swatow, China). - MEYER, Anal. Soc. Españ. Hist. Nat., Madrid, vol. 14, 1885, p. 19 (North Celebes).

EVERMANN and SEALE, Bull. Bur. Fisher., vol. 26, 1906(1907), p. 86 (Bacon). - SEALE and BEAN, Proc. U.S. Nat. Mus., vol. 33, 1907, p. 246



Depth  $2\frac{1}{4}$  to  $2\frac{1}{2}$ ; head  $3\frac{1}{6}$  to  $3\frac{1}{2}$ , width 2 to  $2\frac{1}{8}$ . Snout  $2\frac{7}{8}$  to 3 in head; eye  $4\frac{1}{3}$  to  $4\frac{3}{4}$ ,  $1\frac{2}{5}$  to  $1\frac{3}{4}$  in snout,  $1\frac{3}{5}$  to  $1\frac{7}{8}$  in interorbital, adipose lids narrow all around but little encroaching on iris; maxillary reaches  $\frac{1}{3}$  in or to eye, expansion  $1\frac{1}{3}$  to  $1\frac{2}{3}$ , length  $2\frac{2}{5}$  to  $2\frac{3}{5}$  in head; interorbital  $2\frac{9}{10}$  to 3, convexly elevated.

Gill rakers 6 or 7 + 18 or 19, lanceolate, little longer than gill filaments or  $1\frac{11}{13}$  in eye.

Straight section of lateral line  $1\frac{1}{8}$  to  $1\frac{1}{4}$  in arch, with 40 to 45 scutes of which 30 to 35 beeled. Chest and breast naked, extends upward laterally only  $\frac{1}{3}$  to pectoral base.



1747

D. VII - I, I, 26, I to I, I, 28, I, third spine  $5$  to  $5\frac{1}{2}$  in head, first branched ray  $1\frac{1}{10}$  to  $1\frac{1}{5}$ ; A. II - I, 21, I to I, 23, I, first branched ray  $1\frac{1}{5}$  to  $1\frac{1}{3}$ ; upper caudal lobe  $1$  to  $1\frac{1}{8}$ ; least depth of caudal peduncle  $5\frac{1}{2}$  to  $6\frac{1}{4}$ ; pectoral  $1$  to  $1\frac{1}{4}$ , with age 3 in fish to caudal base, rays II, 20 or II, 22; ventral ray I, 5, fin  $1\frac{9}{10}$  to  $2$  in head.

Back brown to mauve, sides and below whitish. Sides with six transverse dark or brown bands, first narrowest, none wider than pale interspaces, all narrowing little below. Opercle above and behind with narrow submarginal blackish bar, vertical and edge of gill opening pale or whitish. Iris gray, evidently



white in life. Spinous dorsal  
dark neutral gray or  
blackish. Other fins pale or  
yellowish, with soft dorsal  
and anal marginally grayish,  
also each with median  
longitudinal row of gray spots.

Red Sea, Arabia, Madagascar,  
Zatal, Seychelles, India, East  
Indies, Philippines, China,  
New South Wales, Lord Howe  
Island, Norfolk Island,  
Micronesia, Polynesia, Hawaii.



1749

12714, 12717. Atulayan Bay,  
Luzon. June 18, 1909. Length  
82 to 95 mm. Lower gill rakers 20.  
Depth  $2\frac{1}{2}$ .

8548. Busuay Island. April 9,  
1909. Length 87 mm.

22149 [1839]. Cebu market.  
August 28, 1909. Length 205 mm.  
Lower gill rakers 20. Depth  $1\frac{3}{5}$ .

4411. D. 5226. Corregidor Light,  
N.  $10^{\circ}$  E., 10.70 miles (lat.  $14^{\circ}12'15''$  N.,  
long.  $126^{\circ}32'24''$  E.), China Sea south  
of Corregidor. May 4, 1908. Length  
67 mm. Depth  $2\frac{1}{5}$ . Lower gill rakers  
20. A. II - I, 25. About 10 dark 1-shaped  
transverse bands.

18976. Masamat Bay, Duinalasag  
Island. June 12, 1909. Length 148 mm.  
Depth  $2\frac{3}{5}$ .



tubular scales 45 to 47 in lateral line to caudal base and 7 or 8 more out over fin; 5 or 6 above, 7 to 9 below, 24 to 26 predorsal; 9 rows on cheeks; anal entirely scaled. Scales with 9 to 16 basal radiating striae; 42 to 62 apical denticles, with 4 to 15 transverse series of basal elements; circuli very fine.

D. X, I, 27 to 30, I; third spine 2 to 2 1/8 in head, first ray 3 to 3 1/8; A. II, 7, I, second spine 3 1/4 to 3 2/3, third ray 2 to 2 1/8; caudal 1 1/6 to 1 2/5, rounded behind with lower median rays longest; least depth 3 to 3 2/5; pectoral 1 1/5 to 1 1/2; ventral 1 3/5 to 1 4/5.

Drab gray on back and sides, below white. Opercle neutral to slate gray, diffuse marginally. Iris pale. Spinous dorsal slate gray. Soft dorsal and caudal pale brown, dusted with neutral gray marginally. Pectoral and anal soiled



9339, 9340. Murcielagos Bay,  
Mindanao. August 21, 1909.  
Length 285 to 304 mm.

Two examples. Luto, Luzon.  
June 19, 1909. Length 95 to 96 mm.  
Lower gill rakers 21. A. II - I, 23.

6621. North West Point, Verde Island.  
July 22, 1908. Length 338 mm.

8196. Port Buson, Burias Island.  
March 8, 1909. Length 240 mm.

7262. Port Matalvi, Luzon.  
November 23, 1908. Length 244 mm.

8218. Refugio Island, Pasacao,  
Ragay Bay, Luzon. March 9, 1909.  
Length 280 mm.

9309. Sileno Island. August 10,  
1909. Length 418 mm.



~~1559~~

whitish. Slate gray blotch in pectoral  
axil just behind fin origin. Ventral  
whitish.

South Africa,  
Arabia, Portuguese East Africa, <sup>Hebran,</sup>  
Oman, India, East Indies, Philippines,  
China, Japan. I fail to find characters  
to maintain Otolithus vogleri Bleeker  
as a distinct species.

3652 [D. 5442]. San Fernando Point  
Light, N. 39° E., 8.4 miles (N. Lat. 16° 30' 36"  
E. Long. 120° 11' 6"). May 11, 1909. Length 205-  
mm.



A940. Dodepo and Pasefogo  
Islands, Gulf of Tomini, Celebes,  
Dutch East Indies.

A1204. Doworra Island.  
December 2, 1909. Length 315 mm.

A1221. Gamoro Island. December  
3, 1909. Length 230 mm.

A1092. Maitara Island. November  
26, 1909. Length 320 mm.

A1358. Pendek Island. December  
15, 1909.

U.S.N.M., no. 51729. Samoa.  
Bureau of Fisheries.  
Length 208 mm. Type of Caranx  
gilberti.



? Johnius serratus Schneider, Vyst.  
Ichth. Block, 1801, p. 76. Trunquabar.  
Sciaenoides asper Blyth, Journ. Asiat.  
Soc. Bengal, vol. 29, 1860, p. 140. Sitang  
River.

Pseudotolithus mitsukurii Jordan and  
Snyder, Proc. U.S. Nat. Mus., vol. 23, 1901,  
p. 356, pl. 13. Bay of Tokyo; Annot. Zool.  
Japon., vol. 3, 1901, p. 81 (Yokohama).  $\frac{1}{2}$   
Smith and Tope, Proc. U.S. Nat. Mus., vol.  
31, 1906, p. 478 (Kochi).

Pseudosciaena mitsukurii Jordan and  
Starks, Proc. U.S. Nat. Mus., vol. 31,  
1906, p. 520 (Port Arthur, Manchuria).  
 $\frac{1}{2}$  Franz, Abhandl. Kon. Bayer. Akad.  
Wiss., vol. 4, Suppl. band 1, 1910, p. 45  
(Yokohama).



Carangoides equula (Schlegel)

Caranx equula Schlegel, Fauna Japonica, Poiss., pts. 5-6, p. 111, pl. 60, fig. 1, 1844 (Type locality, Sea of Japan; Nagasaki Bay).

— Bleeker, Verh. Batavia. Genoot. (Nat. Ichth. Japan), vol. 26, pp. 5, 102, 1857 (Nagasaki); Act. Soc. Sci. Ind. Néerl., vol. 3, no. 3, p. 6, 1857-58 (Japan).

— Richardson, Ichth. China and Japan, p. 275, 1846 (Japan).

— Günther, Cat. Fish. Brit. Mus., vol. 2, p. 438, 1860 (compiled).

— Steindachner and Döderlein, Denks. Akad. Wiss. Wien, math.-naturw. Kl., vol. , p. 16, 1888.

— Nyström, Bih. Svensk. Vet. Akad. Handl. Stockholm, vol. 13, afd. 4, no. 4, p. 34, 1887 (Nagasaki).



Follow—Incl Caps  
Loaded

21

Brown, paler below. Dusky blotch little smaller than eye, below lateral line well behind gill opening. Head vermiculated with little deeper brown, especially on cheeks. About 8 or 9 transverse dark streaks on body, variably broken in most specimens. Several transverse dark bands across front and interorbital. Iris slate gray. Dorsals grayish, with obscure dusky spots, mostly on spines and rays. Caudal with 4 or 5 transverse brown cross bars. Other fins brown.

East Indies, Philippines, Kiu Siu, Formosa, Japan, Queensland, Melanesia. Known chiefly by its second dorsal spine longest.

22745. Capunuyugan Point, Generale Island, east coast Mindanao. May 9, 1908. Length, 89 mm.

20272. Cataingan Bay, Masbate. April 18, 1908. Length, 72 to 98 mm. 3 examples.

10711 to 10713. Cataingan Bay, Dumung Point, Masbate. April 19, 1908. Length, 59 to 107 mm. 12 examples.

22132 [1905] to 22134. Cebu market. September 4, 1909. Length, 93 to 105 mm. 15 examples. Surigao, Mindanao. May 8, 1908. Length, 34 to 88 mm.

59747 U.S.N.M. Susaki, Japan. Dr. H.M. Smith. Length, 100 mm. As Lethrinus richardsonii.

75504 U.S.N.M. Wakanoura. Jordan and Snyder. Bureau of Fisheries (No. 0201). Length, 190 to 194 mm. 2 examples.

4 examples, A.N.S.P. Calapan, Mindoro. Rev. Joseph Clemens. Length, 130 to 147 mm.



— Jordan and Snyder, Annot. Zool.  
Japon., vol. 3, p. 67, 1901 (reference).  
Proc. U. S. Nat. Mus., vol. , p. ~~438~~ 353,  
1900 (Yokohama).

— Snyder, Proc. U. S. Nat. Mus., vol. 42,  
1912, p. 411 (Kagoshima).

— Jordan and Thompson, Mem. Carnegie  
Mus., vol. 6, no. 4, p. 240, Sep. 1914 (Osaka;  
Shimonoseki, Misaki). — Izuka and  
Matsumura, Cat. Zool. Spec. Mus. Tokyo,  
Verteb., p. 159, 1920 (Kawajiri, Satsuma).

— Barnard, Ann. South African  
Mus., vol. 21, pt. 2, p. 540, October  
1927 (Agulhas Banks; Natal coast).

— Anonymous, Illustr. Jap. Aquat. Plants  
and Animals, vol. 1, pl. 29, fig. 2, 1931.

— Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 86, 1934, p. 444  
(Natal).



Follow—Incl Caps  
8 pt. Leaded

4899. Siasi Island Market. February 17, 1908. Length 360 mm. Generally dull silvery, clouded with olive. Maxillary and adjoining membranes scarlet, also upper back part of mouth inside. Iris silvery, mottled with dusky. Dorsal clouded with dusky, blotch of pale vermilion on each membrane, becoming brighter posteriorly. Anal pale, with dusky and orange mottlings on membranes. Caudal dusky, with pale purplish shades, with 4 transverse rows of dark spots on membranes in crotch and tips of rays pinkish. Pectorals very pale straw yellow. Ventrals dusky.
6160. Tonquil Island, east of Gumila Reef. September 14, 1909. Length 190 mm.
- A461. Tulnalutan Island. September 9, 1909. Length 475 mm.
- A699. Si Amil Island, Borneo. September 26, 1909. Length 390 mm.
13535. Makyan Island. November 29, 1909. Length 160 mm.
- A1403. Tampotana Island. December 21, 1909. Length 257 mm.
20957. Tomahu Island. December 11, 1909. Length 112 mm.
- A1332. Tomahu Island. December 12, 1909. Length 328 mm.
- A1215. Gomomo Island. December 3, 1909. Length 357 mm.
- A876, A877. Limbe Strait, Celebes. November 10, 1909. Length 288 to 533 mm.
- A1606. Nafa, Okinawa, Riu Kiu. February 7, 1910. Length 533 mm. Olivaceous whitish below. Mouth scarlet. Dorsal and anal membranes reddish, with round gray spots on soft dorsal and anal, but on anal red shows more as spots. Caudal reddish at tip. Ventrals dusky above.
- (No. 58022 U.S.N.M.) Zamboanga. Dr. E.A. Mearns. Length 232 to 278 mm. 2 examples.
- (No. 65557 U.S.N.M.) 53° 59' 11" N., 166° 25' 09" W. (evidently erroneous locality?). Albatross collection 1910 (No. 3312). Length 575 mm. As Lethrinus rostratus.



Caranx (Carangoides) equula

Waksuza, Ann. Carnegie Mus., vol.  
15, p. 166, pl. 19, fig. 3, 1924 (Tokyo  
Bay; Kii; Iwajima; Hamada;  
Tosa; Satsuma; Formosa).



across interorbital and fades out  
on caudal peduncle above. An  
interrupted dusky axil stripe begins  
on snout, becomes blackish at middle  
of body and chrome yellow on caudal  
peduncle with small black basal caudal  
spot above. Broken golden brown stripe  
across cheek and preopercle to  
interopercle and few spots on opercle.  
Iris dusky with sapphire blue shades.  
Spinous dorsal dusky, first membrane  
yellowish. Soft dorsal dusky chrome,  
with yellow tip. Anal whitish, tipped  
with yellow and orange. Caudal dusky,  
edged and tipped with pink. Ventral  
pale yellow, spine and tip of first



Selar equula Bleeker, Verh.  
Batavia. Genoot. (Nal. Ichth. Japan),  
vol. 25, p. 14, 1853 (reference).

Carangus equula Jordan and Snyder,  
Proc. U. S. Nat. Mus., vol. 23, p. 749, 1901  
(Yokohama). — Jordan and Starck, Bull. U.  
S. Fish Comm., vol. , p. 585, 1904 (Suruga Bay).  
— Smith and Pope, Proc. U. S. Nat. Mus., vol. 31, p. 466,  
1906 (Kochi).

Carangoides equula Fowler, Proc.  
Acad. Nat. Sci. Philadelphia, vol.  
81, p. 606, 1929 (Hong Kong).

Jordan and Hubbs, Mem. Carnegie  
Mus., vol. 10, no. 2, p. 224, June 27,  
1925 (Shizuoka; Osaka; Toba;  
Kochi; Misawa Bay; Misaki).

— Oshima, Philippine Journ. Sci., vol. 26,  
no. 3, p. 391, March 1925 (Taihoku and  
Keelung, Formosa).



309 (no locality, probably Java). - GÜNTHER, Cat. Fish. Brit. Mus.,  
vol. 1, 1859, p. 461 (no locality). - SCHMELTZ, Cat. Mus. Godeffroy,  
No. 1, 1864, p. 8 (South Seas). - KNER, Reise Novara, Fische, 1865,  
p. 82 (Madras). - BLEEKER, Atlas Ichth. Ind. Néerland., vol. 3, 1876-  
1877, p. 120, pl. (76)354, fig. 5 (Sumatra, Java, Amboina).

PÖHL, Cat. Mus. Godeffroy, No. 9, 1884, p. 44 (Indian Seas). - MEYER,  
Anal. Soc. Españ. Hist. Nat., Madrid, vol. 14, 1885, p. 19 (North  
Celebes). - JORDAN and EVERMANN, Proc. U.S. Nat. Mus., vol. 25, 1902,  
p. 350 (Formosa, Giran). - JORDAN and RICHARDSON, Mem. Carnegie Mus.,  
vol. 4, No. 4, 1909, p. 189 (Giran). - FOWLER, Copeia, No. 58, June  
18, 1918, p. 64 (Philippines). - HERRE and MONTALBAN, Philippine Journ.  
Sci., vol. 33, No. 4, Aug. 1927, p. 421, pl. 1, fig. 2 (Banaran and  
Sitanki Islands). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1927,  
p. 281 (Philippines); Mem. Bishop Mus., vol. 10, 1928, p. 215 (Hawaiian  
Islands); Proc. Acad. Nat. Sci. Philadelphia, 1929(1930), p. 609 (Hong  
Kong).

Letrinus leutjanus ELERA, Cat. Fauna Filip., vol. 1, 1895, p. 482 (Luzon,  
Manila Bay). (Error)

Lethrinus sordidus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 298.  
New Guinea. - BLEEKER, Atlas Ichth. Ind. Néerland., vol. 8, 1876-1877,  
p. 121 (copied).

Lethrinus cocosensis BLEEKER, Nat. Tijds. Nederland. Indie, vol. 7, 1854,  
p. 40. (Nova Selma, Cocos-Keeling Islands). - GÜNTHER, Cat. Fish. Brit.  
Mus., vol. 1, 1859, p. 459 (compiled). - BLEEKER, Atlas Ichth. Ind.  
Néerland., vol. 8, 1876-1877, p. 121, pl. (18)296, fig. 1 (Cocos,  
Celebes, Halmaheira, New Guinea). - FOWLER, Mem. Bishop Mus., vol. 10,  
1928, p. 215 (note).

Lethrinus glyphodon GÜNTHER, Cat. Fish. Brit. Mus., vol. 1, 1859, p. 462.  
(Lousiades). - SCHMIDT, Trans. Pac. Comm. Acad. Sci. U.S.S.R., vol.



Caranx dutton Jordan and Snyder,  
Bull. Bur. Fisher., vol. 26, p. 210,  
fig. 2, 1906 (1907) (type locality,  
Honolulu). — Fowler and Ball,  
Bull. Bishop Mus., no. 26, p. 12,  
1925 (Johnston Island; French  
Frigates Shoal). — Fowler, Proc.  
Acad. Nat. Sci. Philadelphia,  
vol. 77, 1925, p. 214 (atal coast  
in 40 fathoms); Mem. Bishop  
Mus., vol. 10, p. 146, 1928 (Honolulu;  
Johnston Island; French Frigates  
Shoal).



general pale coloration. Further as shown in Günther's figure the hind pre-opercle edge and hind opercle edge are usually deep or dark brown. I find

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the eye very variable, often quite large in young examples. In many from Oceania the scales above the lateral line often varied 5 or 6 to the spinous dorsal, though 5 is the more frequent. I have also thought Lethrinus erythropterus Valenciennes a synonym as the brief notice of its coloration suggests this. My largest example was 462 mm. long.

Lethrinus mahsena is often with difficulty distinguished from Lethrinus hypselopterus, as preserved examples frequently have the characters little differentiated. However, Lethrinus mahsena usually has a more abrupt front profile to the head, so that the jaws are less protruded; also the upper profile of the snout is usually much less concave, while in Lethrinus hypselopterus the snout is often quite protruded anteriorly in comparison. Great variation occurs in the eyes of both species.

Lethrinus abbreviatus is based on a drawing 188 mm. long. Back elevated. Depth nearly  $\frac{1}{3}$  length. Blue-green, crossed by 10 to 12 regular brown bands.

6516, 8142, 8167, 8174, 9257, 17746, 17747. Alibijaban Island, Ragay Gulf, Luzon. March 6, 1909. Length 185 to 280 mm. [8167.] Side with 5 reddish longitudinal bands, first above lateral line, second immediately below its front portion but crosses below soft dorsal, third from opercle point and crosses on middle of caudal peduncle, fourth from behind upper pectoral base to just below middle of caudal peduncle, fifth backward from lower pectoral base to anal axil. Snout and top of head smoky olivaceous, cheeks lighter; bar across top of eyeball and little of lower orbit cherry red; bar of same behind hind preopercle edge and across opercle. Fins bright vermilion terminally; entire membranes and rays of soft dorsal vermilion. Pectoral pale orange, upper ray somewhat vermilion at tip and membranes clear. Ventrals pale yellow, front edge purplish, membranes clear.



1759

depth  $2\frac{1}{8}$  to 3; head 3 to  $3\frac{2}{3}$ ,  
width 2 to  $2\frac{4}{5}$ . Snout  $2\frac{3}{4}$  to 3  
in head from snout tip; eye  
 $3\frac{1}{8}$  to  $4\frac{3}{5}$ , 1 to  $1\frac{1}{8}$  in snout,  
greater than interorbital,  
without or with narrow adipose  
lids; maxillary reaches to or  $\frac{1}{5}$   
in eye, expansion  $1\frac{4}{5}$  to  $2\frac{1}{2}$  in  
eye, length  $2\frac{1}{5}$  to  $2\frac{1}{3}$  in head  
from snout tip; interorbital  
 $3\frac{1}{8}$  to 4, convexly elevated. Gill  
raker 8 to 10 + 19 to 25, lanceolate,  
 $1\frac{2}{5}$  in eye; gill filaments  $\frac{2}{3}$   
gill rakers.

Scales 52 to 59 + 25 to 33  
(last 2 on caudal base) <sup>in lateral line,</sup> straight  
section  $1\frac{1}{2}$  to  $1\frac{3}{4}$  in arch. Breast  
and belly scaled.

D. I, VII or VIII, I, 22, I to  
25, I, second erect spine  $2\frac{1}{8}$  to  $2\frac{1}{5}$



in total head length, first ray  
 $1\frac{3}{4}$  to  $3\frac{1}{3}$ ; A. II - I, 18, I to 22, I,  
 first ray 2 to  $2\frac{7}{8}$ ; caudal  $1\frac{1}{10}$   
 to  $1\frac{1}{4}$ ; least depth of caudal  
 peduncle  $7\frac{1}{8}$  to  $7\frac{1}{4}$ ; ventral 2  
 to 4; pectoral 1 to  $2\frac{3}{4}$  in fish  
 without caudal, not reaching  
 straight section of lateral line.

Back drab gray, sides and  
 lower surface silvery white.  
 Upper hind opercle edge slate  
 black. Dorsals gray, dusky  
 or neutral slate terminally.  
 Caudal gray, also pectoral.  
 Other fins whitish, with  
 slight yellowish white tinge  
 at anal base in front.

South Africa, Natal, Formosa,  
 China, Japan, Hawaii.



1759  
U. S. N. M., No. 22587. Miura-  
misaki, Japan. Japanese  
Government. Length 143 to 175 mm.  
Two examples.

U. S. N. M., No. 51432. Suruga  
Bay, Japan. Albatross Collection  
(3735). May 16, 1900. In 36  
fathoms. Length 112 mm.

U. S. N. M., No. 57523. Japan.  
P. L. Jouy. Length 108 mm.

U. S. N. M., No. 57566. Japan.  
P. L. Jouy. Length 134 mm.

U. S. N. M., No. 59617. Kochi,  
Mr. H. M. Smith. Length 227 mm.  
Nine transverse dark gray bands,  
about wide as pale interspaces.



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(108) D. X, 9, third spine  $2\frac{2}{3}$  in total head length, longer than last spine, which also longer than penultimate spine, last spine  $4\frac{1}{4}$  in total head, third ray  $3\frac{1}{5}$ ; A. III, 8, third spine  $4\frac{1}{4}$ , last ray  $3\frac{1}{3}$ ; caudal  $1\frac{1}{4}$ , emarginate, lobes pointed; least depth of caudal peduncle  $3\frac{2}{5}$ ; pectoral  $1\frac{1}{3}$ ; ventral  $1\frac{2}{5}$ .

Yellowish, back greenish-gray, becomes whitish on belly. Head brown, with darker blotches. Inside mouth red, lips yellow. Hind border of gill opening and pectoral base reddish yellow. Inner base of pectoral deep red. Fins yellow, spinous dorsal brownish. Iris dusted purplish. Length, 450 mm. (Klunzinger.)

Red Sea.

Lethrinus carinatus Weber

(109) Lethrinus carinatus WEBER, Siboga Exped., vol. 37, Fische, 1913, p. 289, pl. 2, fig. 1, text fig. 68, (Seget, Galea Straits, New Guinea; Tual, Niedrig Kei). - FOWLER, Mem. Bishop Mus., vol. 10, 1928, p. 214 (copied).

(110) Depth  $2\frac{1}{2}$  to  $2\frac{3}{5}$ ; head  $2\frac{3}{4}$  to  $2\frac{7}{8}$ , width  $2\frac{1}{8}$  to  $2\frac{1}{5}$ . Snout  $1\frac{4}{5}$  in head; eye 4 to  $4\frac{1}{8}$ ,  $2\frac{1}{5}$  to  $2\frac{1}{4}$  in snout, 1 in interorbital; maxillary reaches to or slightly beyond front nostril, length  $2\frac{2}{3}$  to  $2\frac{3}{4}$  in head; upper lip moderate, coriaceous; broad villiform bands of teeth in front of each jaw, with outer enlarged series largely conic, as 4 rather low canines in front above and below, each side posteriorly, last 3 molar-like, penultimate, with median longitudinal depression or groove; interorbital 4 to  $4\frac{1}{5}$ , convex; naked region of head finely striate or skin rugose. Gill rakers 5 + 5, short, low tubercles, about  $\frac{3}{5}$  of gill filaments.



A. N. S. P., 3 examples. Hong  
Kong. April 1928. Henry W. Fowler.  
Length 185 to 265 mm.

A. N. S. P., one example. Natal.  
In 40 fathoms. 1922. H. W. Bell  
Harley. Length 143 mm.



1830, p. 312. (Red Sea. — PETERS, Arch. Naturg., 1855, p. 243 (Mozambique)).

Lethrinus erythropterus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 313. (Ulae).

?Lethrinus erythrophthalmus KITTLITZ, Denkwerk. Reis. Mikrones., vol. 2, 1858, p. 87. (Senjains Island, in N. Lat.  $6^{\circ}$  W., Long.  $20\frac{1}{2}^{\circ}$  W.)

Depth  $2\frac{1}{3}$  to  $2\frac{1}{2}$ ; head  $2\frac{3}{4}$  to 3, width  $1\frac{4}{5}$  to  $2\frac{1}{5}$ . Snout  $1\frac{7}{8}$  to 2 in head; eye 3 to  $4\frac{1}{5}$ ,  $1\frac{2}{3}$  to  $2\frac{1}{8}$  in snout, little greater than interorbital in young to  $1\frac{1}{3}$  with age; maxillary reaches slightly beyond front nostril though not quite opposite hind one, length  $2\frac{1}{2}$  to  $2\frac{4}{5}$  in head; lips moderately wide, coriaceous; band of villiform teeth in each jaw, with outer row enlarged, largely conic, as 4 canines in front of each and last 3 each side broadly molar, often with slight median depression; interorbital 3 to  $3\frac{1}{2}$  in head, broadly convex; naked region of head very finely striate, forming more or less vertically on cheek. Gill rakers 4 or 5 + 5, short, broad tubercles, about  $\frac{1}{3}$  of gill filaments, which  $2\frac{1}{3}$  in eye.

Scales 43 or 44 in lateral line to caudal base and 1 to 3 more on latter; 6 above, 14 to 16 below, 7 to 8 predorsal; caudal and pectoral bases finely scaled. Scales with 14 to 20 basal radiating striae, with 2 to 5 auxiliaries; 106 to 183 apical denticles; with 4 to 10 transverse series of basal elements; circuli fine.

D. X, 9, I, fourth spine  $2\frac{2}{5}$  to  $3\frac{1}{8}$  in head, fourth ray  $2\frac{1}{4}$  to  $2\frac{1}{2}$ ; A. III, 8, I, third spine  $2\frac{1}{4}$  to  $3\frac{1}{5}$ , fourth ray  $2\frac{2}{3}$  to  $2\frac{7}{8}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{3}$ , well emarginate; least depth of caudal peduncle  $2\frac{3}{4}$  to  $2\frac{4}{5}$ ; pectoral 1 to  $1\frac{1}{10}$ ; ventral  $1\frac{1}{5}$  to  $1\frac{1}{3}$ .

Body pale brown, but slightly lighter below, otherwise uniform. Head contrasted dull chocolate-brown, little paler on under surface. Iris dull yellowish. Fins all pale like general body color. Pectoral base sometimes brownish.



Carangoides gymnotethus Cuvier <sup>1761</sup>

Caranx gymnotethus Cuvier,  
Hist. Nat. Poiss., vol. 9, p. 73,  
1833 (type locality, Seychelles).

— Sauvage, Hist. Madagascar, Poiss.,  
p. 518, 1891 (reference).

Citula gymnotethus Bleeker, Rech.  
Faune Madagascar, pt. 4, p. 99, 1874  
(reference).



Depth  $2\frac{2}{3}$ ; head  $3\frac{3}{4}$ . Snout  $2\frac{2}{3}$  in head; eye 4,  $1\frac{2}{5}$  in snout,  $1\frac{2}{3}$  in interorbital; maxillary reaches about  $\frac{3}{4}$  in snout, expansion  $1\frac{3}{4}$  in eye, length  $3\frac{1}{4}$  in head; 9 teeth shown in profile of each jaw on figure; interorbital moderately high; lower half of hind preopercle edge, also entire lower edge finely serrated.

Scales 80 along above lateral line, 75 along below lateral line, <sup>tubular</sup> 60 in lateral line to caudal base though figure shows about 70; 11 above, 16 below, predorsal extend forward half way in snout; 7 rows on cheeks to preopercle ridge with 3 more across preopercle flange; preorbital finely scaled nearly up to nostrils.

D. XI, 14 or 15 { XI, 14, I on figure, seventh spine 2 in head, first ray



Caranx gymnotethoides Günther,  
Cat. Fish. Brit. Mus., vol. 2, p. 431,  
1860 (compiled). — Kner, Reise  
Novara, Fische, p. 153, 1865 (Java).

— Day, Fishes of India, pt. 2, p. 217,  
pl. 48, fig. 2, 1876 (Madras). —

Jordan and Seale, Bull. Bur.  
Fishes, vol. 25, p. 232, 1905 (1906).  
(reference).

— Smith and Swain, Proc. U. S. Nat.  
Mus., vol. 5, p. 125, 1882 (Johnston  
Island). — Day, Fauna British India,  
Fishes, vol. 2, p. 155, 1889.

— Pellegrin, Bull. Soc. Zool. France,  
vol. 39, p. 228, 1914.

— McCulloch, Rec. Austral. Mus.,  
vol. 15<sup>no. 1</sup>, p. 31, 1926 (Great Barrier  
Reef, Queensland); Austral. Mus.  
Mem., no. 5<sup>pt. 2</sup>, p. 187, Sep. 10, 1929 (reference).



Sciaena mitsukurii Jordan and Thompson,  
Proc. U.S. Nat. Mus., vol. 39, 1911, p. 246,  
fig. 1 (Tokyo, Awa, Matsushima,  
Wakanoura). <sup>1</sup>/<sub>2</sub> Snyder, Proc. U.S. Nat.  
Mus., vol. 42, 1912, p. 416 (Tokyo). <sup>1</sup>/<sub>2</sub> Jordan  
and Thompson, Mem. Carnegie Mus., vol. 6,  
no. 4, September 1914, p. 258, pl. 42, fig. 1  
(Sendai). <sup>1</sup>/<sub>2</sub> Tanaka, Fishes of Japan,  
vol. 10, November 1916, p. 177, pl. 48, fig. 187,  
pl. 49, fig. 189-190 (Tokyo).

Iibea mitsukurii Jordan and Hubbs, Mem.  
Carnegie Mus., vol. 10, no. 2, June 27, 1925, p.  
243 (Toba, Shizuoka, Choshi).

Depth  $3\frac{1}{10}$  to  $3\frac{1}{4}$ ; head  $3\frac{1}{4}$  to  $3\frac{1}{3}$ , width  
2. Snout  $3\frac{2}{3}$  to  $3\frac{4}{5}$  in head; eye 6 to  $6\frac{1}{4}$ ,  
 $1\frac{1}{2}$  to  $1\frac{2}{3}$  in snout,  $1\frac{3}{5}$  to  $1\frac{3}{4}$  in interorbital,



Carangoides gymnotethoides Bleeker,  
 Nat. Tijds. Ned. Indie, vol. 1,  
 p. (355) 364, 1850 (type locality,  
 Batavia, Java); Verh. Batavia.  
 Genoot. (Nakreeel.), vol. 24, p. 61,  
 1852 (Batavia). — Jordan and  
Evermann, Bull. U. S. Fish Comm.,  
 vol. 23, pt. 1, p. 199, 1903 (1905)  
 (Johnston Island). — Fowler,  
 Bull. Bishop Mus., no. 22, p. 25,  
 1925 (Honolulu). — Fowler and Ball,  
 Bull. Bishop Mus., ~~not~~ no. 26, p.  
 12, 1925 (Laysan). — Fowler, Mem.  
 Bishop Mus., vol. 10, p. 150, 1928  
 (Honolulu; Laysan; Johnston Island;  
 Society Islands).



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Kyphosus bleekeri, new name

Pimelopterus lambus (not Cuvier)

Günther, Cat. Fishes British Mus., vol.  
1, 1859, p. 498 (Moluccas).

Pimelopterus waigiensis (not Duoy and

Gaimard) Bleeker, Atlas Ichth. Ind.

Néerland., vol. 9, 1877, p. 17, pl. (4) 364,

fig. 2 (specimen, definite locality not  
indicated).



~~Caranx gymnotethoides Smith  
and Swain, Proc. U. S. Nat.  
Mus., vol. 5, 1882, p. 125 (Johnston  
Island).~~

Carangoides gymnotethoides evermanni  
Nichols, Amer. Mus. Novit., no. 3,  
p. 2, fig. 1, March 9, 1921 (type  
locality, Honolulu); no. 50, p.  
3, October 24, 1922 (Honolulu).

Ferdania evermanni Jordan,  
Evermann, Yanaka, Proc. Cal. Acad.  
Sci., ser. 4, vol. 16, p. 662, pl. 22, fig.  
3, November 14, 1927 (Honolulu).



9357. Bugsuk Island, Balabac.

January 5, 1909. Length 213 mm.

15696. Busin Harbor, Burias Island.

March 8, 1909. Length 220 mm.

25147 A. N. S. P., Padang, Sumatra.

a.c.  
Harrison and H. M. Miller. Length 469 mm.

Color in alcohol brown, lower surface slightly lighter and side with number of rather broad pale or indistinct longitudinal narrow bands of drab gray. Fins olivaceous dusky. Iris pale brownish. Peritoneum black.

1 example. A. N. S. P. Madagascar.  
M. Lambertson. Length 250 mm.



Depth  $2\frac{1}{2}$  to  $2\frac{2}{3}$ ; head  $3\frac{2}{3}$  to  $3\frac{3}{4}$ , width  $1\frac{9}{10}$  to 2. Snout 3 in head; eye  $4\frac{4}{5}$  to  $5\frac{1}{5}$ ,  $1\frac{7}{8}$  to  $2\frac{2}{3}$  in snout,  $1\frac{1}{4}$  in supraorbital depth; maxillary reaches eye or  $\frac{1}{4}$  in eye, expansion  $1\frac{1}{4}$  to 2 in eye, length  $2\frac{1}{2}$  to  $2\frac{3}{5}$  in head; interorbital  $2\frac{2}{3}$  to 3, high, convexly elevated. Gill rakers 7 + 20, lanceolate, strong, equal gill filaments or  $1\frac{1}{2}$  in eye; 5 lower as rudiments.

Scales 83 + 30 to 38 in lateral line, straight section half of arch which reaches middle of soft dorsal. Scales very fine, extend down on sides of chest though median line of breast naked. Scales with 45 to 51 circuli.



D. VIII, I, 30 to 33, second spine  
 $3\frac{4}{5}$  to  $4$  in total head length,  
 first branched ray 1 to  $1\frac{1}{3}$ ;  
 A. II - I, 26 to 28, first branched  
 ray  $1\frac{2}{3}$  to  $1\frac{3}{4}$ ; caudal 1 to  $1\frac{1}{8}$ ,  
 widely lunate; least depth of  
 caudal peduncle  $5\frac{1}{2}$  to  $5\frac{3}{4}$ ;  
 ventral  $2\frac{1}{8}$  to  $2\frac{1}{5}$ ; pectoral 3  
 in fish without caudal.

Gray or grayish blue above,  
 sides and below silvery white.  
 Front part of soft dorsal and  
 anal dusky. Pectoral pale,  
 axil dark. No dark opercular  
 spot.

Seychelles, India, East Indies,  
 Philippines, Queensland, Polynesia,  
 Hawaii.



6595. Port San Vicente, Luzon  
side. November 18, 1908. Length  
177 mm. Depth 2. Lower gill rakers  
17. A. II - I, 26.

A 941. Dodefo and Parejogo Islands,  
Gulf of Tomini, Celebes. November  
16, 1909. Length 360 mm.

A 1453 to A 1456. Kait Point,  
Libani Bay, Celebes. December 29, 1909.  
Length 300 to 435 mm.

~~Ac.~~ U. S. N. M., No. 52663. Hawaiian  
Islands. Bureau of Fisher. (491).  
Length 250 mm. Labeled drawn and  
as Carangoides ferdan. Evidently  
specimen figured by Jordan and  
Evermann as Carangoides gymno-  
stethoides. It shows the different  
physiognomy of the head when  
compared with Waksiga's figure  
of Caranx (Carangoides) ferdan  
1924.



Can 179

Johnius cujus (Buchanan-Hamilton)  
Bola cujus Buchanan-Hamilton, Fishes of  
Ganges, 1822, pp. 81, 369, pl. 12, fig. 27.

Ganges estuaries.

Corvina cujia Cuvier, Hist. Nat. Poiss., vol.  
5, 1830, p. 96 (copied).  $\frac{1}{m}$  Schlegel, Fauna  
japonica, Poiss., pts. 2-4, 1843, p. 58  
(no locality).  $\frac{1}{m}$  Blyth, Journ. Asiatic  
Soc. Bengal, vol. 29, 1860, p. 141 (Vitang River).  
 $\frac{1}{m}$  Günther, Cat. Fishes Brit. Mus., vol. 2, 1860,  
p. 300 (Calcutta).

Sciaena cujia Day, Fishes of India, pt. 2,  
1876, p. 187 (estuaries of Ganges); Fauna  
British India, vol. 2, 1889, p. 115.  $\frac{1}{m}$  Tirant,

Service Océanogr. Pêch. Indo Chine, 1929,  
note 6<sup>e</sup>, p. 169 (Cochin China).

$\frac{1}{m}$  Jordan and Snyder, Annotat. Zool. Japon., vol. 3,  
1901, p. 81 (India; Japan).



Carangoides armatus (Forskål)

Sciaena armata Forskål,

Descript. Animal., p. 53, 1775

(type locality, Red Sea). —

Bonnaterre, Tabl. Ichth., p. 125,

1788 (copied). — Gmelin, Syst.

Nat. Linn., pt. 1, p. 1306, 1789

(copied). — Walbaum, Artedi

Pisc., vol. 3, p. 319, 1792 (copied).



Follow—Incl Caps  
Loaded

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- (No. 58992 U.S.N.M. Bacon. Bureau of Fisheries (3970). Length, 101 mm.
- (No. 65899 U.S.N.M. Kusaie, Carolines. Bureau of Fisheries (08935). Length, 242 mm.
- (No. 65900 U.S.N.M. Suva, Fiji. Albatross collection (A143). Length, 276 mm.
- (No. 65901 U.S.N.M. Vavau, Tonga Islands. Bureau of Fisheries (08896). Length,  
186 mm.
- (No. 84198 U.S.N.M. Cebu. Dr. F. Baker. Length, 279? mm.
- (No. 84244 U.S.N.M. Zamboanga. Dr. F. Baker. Length, 138 mm. As Lutjanus  
.fulviflamma.
- (No. 84260 U.S.N.M. Zamboanga. Dr. F. Baker. Length, 144? mm.
- (No. 48621 A.N.S.P. Philippines. Commercial Museum of Philadelphia. Length,  
125? mm.
- (No. 52802 A.N.S.P. Calapan, Mindoro. Rev. Joseph Clemens. Length, 150? mm.
- (No. 52801 A.N.S.P. Orion. May 11, 1923. Rev. Joseph Clemens. Length, 195 mm.

Lethrinus atkinsoni Seale

Lethrinus atkinsoni SEALE, Philippine Journ. Sci., vol. 4, No. 6, 1909,  
p. 515, pl. 11, (Balabac Island). — HERRE and MONTALBAN, Philippine Journ.  
Sci., vol. 33, No. 4, Aug. 1927, p. 412 (type).

Depth  $2\frac{1}{2}$ ; head  $2\frac{2}{5}$ , upper profile obtuse. Snout  $1\frac{9}{10}$  in head;  
eye  $1\frac{2}{3}$ ,  $1\frac{1}{2}$  in snout, impinging on upper profile, maxillary reaches  $\frac{7}{8}$  to  
eye, length  $2\frac{3}{5}$  in head, 4 large front canines in each jaw, laterals conic in  
front and large molars behind, each molar with longitudinal groove; behind  
canines patch of vomerine teeth; interorbital  $3\frac{2}{5}$ , slightly convex. Gill  
rakers 4 short, blunt on lower branch of first arch, longest  $\frac{1}{4}$  pupil.



Cetula armata Rüppell, Atlas Reise  
nördl. Afrika, Fische, p. 103, 1828  
(Red Sea); Neue Wirbelth. Fische,  
p. 50, 1835 (reference).



Depth  $2\frac{3}{5}$  to 3; head  $2\frac{2}{5}$  to  $2\frac{1}{2}$ , width 2 to  $2\frac{1}{5}$ . Snout  $3\frac{2}{5}$  to 4 in head; eye  $2\frac{4}{5}$  to  $3\frac{1}{3}$ , 1 to  $1\frac{1}{8}$  in <sup>or greater in young,</sup> snout, greater than interorbital; maxillary reaches opposite eye center, expansion  $2\frac{1}{5}$  to  $3\frac{1}{4}$  in eye, length  $2\frac{1}{5}$  to  $2\frac{1}{4}$  in head; bands of fine villiform teeth in jaws, on vomer and palatines; interorbital  $4\frac{4}{5}$  to 5, nearly level; preopercle ridge and edge denticulate. Gill rakers 5+14, of which 2 or 3 uppermost and 4 lowermost rudimentary tubercles; longest little greater than gill filaments or 2 in eye.

Scales 23 in lateral line to caudal base and 6 or 7 more out over latter, 3 above, 7 below, 5 predorsal, 2 rows on cheek to preopercle ridge. Tubes in lateral line simple, rather large



~~Mitula~~ parvifrons Bleeker, Ned.

Tijds. Dierk., vol. 1, p. 240, 1863

(Obi); vol. 2, p. 174, 1865 (Siam;  
<sup>Rech. Faune Indogrecan, pt. 4, p. 99, 1874 (reference);</sup>  
 reference); Arch. Neerl. Sci.

Nat., vol. 13, p. 37, 1878 (New  
<sup>Dierk. Akad. Wet. Amsterdam, vol. 18, p. 14, 1879 (Japan).</sup>  
 Guinea); — Jordan and Snyder,

Annot. Zool. Japon., Tokio, vol. 3,  
 p. 68, 1901 (reference). — Snyder,

Proc. U. S. Nat. Mus., vol. 42, 1912,  
 p. 411 (Kagoshima). — Jordan and  
Starks, Ann. Carnegie Mus., vol. 11, p. 443,  
 1917 (Ceylon).

— Fowler, Copeia, no. 54, p. 63,  
 June 18, 1918 (Philippines).

— Oshima, Philippine Journ. Sci., vol.  
 26, no. 3, p. 396, March 1925 (Taihoku and  
 Amping, Formosa).



7078 to 7082, 21981. Port San Pio Quinto, Camiguin Island. November 11, 1908.

Length 85 to 282 mm. Dark lateral blotch distinct. More or less obscure pearly spots on lower side. No noticeable stripes on head. Fins rather vermilion terminally, without scarlet in axils.

19450, 21625, 22034. River at Pasacao, Luzon. March 9, 1909. Length 54 to 73 mm. 11 examples.

19451. River at Pasacao. March 10, 1909. Length 71 mm.

6292. Romblon Harbor. March 25, 1908. Length 176 mm.

7319. Sablayan Bay, Mindoro. December 12, 1908. Length 560 mm.

5934. Sabtan Island. November 8, 1908. Length 230 mm.

18621 to 18622, 18625 to 18627. Saboon Island, Ragay Gulf, Luzon. March 10,

1909. Length 124 to 152 mm. [1284.] Olive and silvery gray, white below.

Large black lateral blotch under middle of lateral line. Few dashes of lilac-blue about eye, near nostril and on little of lower edge of orbit.

Opercular flap slightly dusky. Scales of back and upper sides with pearly spot in center, olive of sides more or less bar-like and reticulated. Dorsal very pale olive, clouded with vinaceous. Anal pale olive, slightly vermilion at tip of soft portion. Caudal olivaceous basally, vermilion terminally and 3 obscure transverse bars on fin. Pectorals very pale hyaline pink. Ventrals yellowish. Inside mouth red.

12805, 20946. San Miguel Harbor, Ticao Island. April 21, 1908. Length 137 to 148 mm.

9133, 9134. San Roque, Leyte. July 29, 1909. Length 278 to 298 mm.

19680 to 19683. Santa Cruz Island, Marinduque. April 24, 1908. Length 68 to 100 mm.

5001, 5002. Simonon Island, Tawi Tawi Group. February 24, 1908. Length 240 to 290 mm.



Citula armata<sup>ms</sup> Snyder, Proc. U.  
S. Nat. Mus., vol. 42, 1912, p. 411  
(Kagoshima).



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5233, 5235, 5236 [1310]. Canmahala Bay, Ragay Gulf, Luzon. March 11, 1909.

Length 212 to 224 mm. [1310.] Back olive, fading to pearl gray; center of each scale pearly; lower sides silvery, becoming white on breast and belly. Side with pale red longitudinal bands, first indistinct on second row of scales above lateral line, second close below lateral line and joins third which level with opercular point on caudal peduncle, fourth behind pectoral base, fifth obscurely below lower pectoral base. Side also with 4 or 5 transverse dark bars, first on nuchal region, fourth below first soft dorsal rays and last from hind dorsal rays. Top of head olive, side paler with yellow tinge; preopercle edges blood red; red on upper eyeball and lower orbit; inside mouth red. Dorsal with bright vermilion shades; spinous portion clear, vermilion showing both on membranes and spines; only soft fin bright. Anals orange, bright only at margin. Caudal dusky vermilion. Pectoral clear orange, dusky in axil, shows slightly at upper base above fifth ray. Ventral very pale.

11697, 11698. Capunuyugan Point, Mindanao. May 10, 1908. Length 158 to 178 mm.

11843. Caracaran, Batan Island. June 8, 1909. Length 203 mm.

12088. Cavite market. December 1, 1908. Length 156 mm.

7579, 7608. Cebu market. April 6, 1908. Length 192 mm.

7512, 16332, 16333. Chase Head, Endeavor Strait, Palawan. December 22, 1908.

Length 192 to 264 mm. [7512.] Pale vermilion lateral stripes. No pre-orbital bar. Bright crimson tinge below preopercle and at opercle tip.

19033. Dasol Bay. May 8, 1909. Length 128 mm.

4624. Grande Island Reef, Subig Bay. January 8, 1908. Length 175 mm.

8991, 11863. Gubat Bay. June 23, 1909. Length 223 to 278 mm.

13204. Jolo Island, Jolo. March 7, 1908. Length 140 mm.



Caranx armatus Cuvier, Hist. nat.

Poiss., vol. 9, p. 127, 1833 (on Rüppell). —

Rüppell, Neue Wirbelth. Fische, p. 50,  
1835 (reference) — Bleeker, Nat. Geneesk.  
Arch. Ned. Indië, vol. 2, p. 517, 1845 (Batavia).

— Cantor, Journ. Asiatic Soc.

Bengal, vol. 18, pt. 2, p. 1113, 1849  
(1850) (Pinang Sea; Singapore).

— Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 453, 1860 (Pinang Sea; Moluccas;  
Sumatra; China). — Day, Fishes  
of Malabar, p. 89, 1865. — Playfair,  
Fishes of Zanzibar, p. 61, 1866 (Aden;  
Zanzibar; Seychelles).



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Amia kalloptera (Bleeker).

Upogon kallopterus Bleeker, Act. Soc.  
Sci. Ind. Néerl. (Manado), vol. 1, 1856,  
p. 33. Manado, Celebes. — Günther, Cat.  
Fishes. Brit. Mus., vol. 1, 1859, p. 241  
(copied). — Regan, Ann. Durban Mus.,  
vol. 1, pt. 3, 1916, p. 168 (Durban, Natal).  
— Gilchrist and Thompson, Ann.

Durban Mus., vol. 1, 1917, p. 340 (compiled).  
— Barnard, Ann. South Afr. Mus., vol. 21, 1927, p. 519 (Natal coast).  
Amia kallopterus Bleeker, Atlas  
Ichth. Ind. Néerl., vol. 7, 1873-76, p.  
89 (Celebes and Sangir); vol. 8, 1876-77,  
pl. (59) 337, fig. 2.

Amia kalloptera Jordan and Richardson,  
Bull. Bur. Fisher., vol. 27, 1907 (1908), p.  
25-5 (Tuga Island). — Fowler, Copeia,  
no. 58, June 18, 1918, p. 63 (Philippines).



— Klunzinger, Verh. zool. bot. Gesell.  
Wien, vol. 21, p. 455, 1871 (Red Sea).

— Martens, Preuss. Exped. Ost Asien, vol.  
1, p. 391, 1876 (Singapore). — Day, Fishes  
of India, pt. 2, p. 223, pl. 50, fig. 6,  
1876 (Andamans). — Peters, Monatsb.  
Akad. Wiss. Berlin, p. 836, 1876 (1877).  
(New Guinea; New Britain). — Alleyne and  
Macleay, Proc. Linn. Soc. New South Wales, vol. 1,  
p. 323, 1876 (New Guinea).

— Károli, Termesz. Füzetek, Budapest,  
vol. 5, p. 161, 1881 (Singapore). —  
Macleay, Proc. Linn. Soc. New South Wales,  
vol. 5, pt. 4, p. 536, 1881 (Cape York). —  
Day, Fauna British India, Fishes,  
vol. 2, p. 165, 1889.



~~Mulloidichthys auriflamma~~ Fowler,  
Proc. Acad. Nat. Sci. Philadelphia,  
1929 (1930), p. 610 (Hong Kong), p. 649  
(Honolulu).

Mullus japonicus Houttuyn, Verhand.  
Hollandische Maatsch. Haarlem, vol. 20,  
1782, p. 334. Japan. <sup>1</sup>/<sub>m</sub> Gmelin, Syst.  
Nat. Linn., vol. 1, 1789, p. 134 (Japanese  
Sea). <sup>1</sup>/<sub>m</sub> Walbaum, Arted. Pisc., vol. 3,  
1792, p. 619 (on Houttuyn). <sup>1</sup>/<sub>m</sub> Forster,  
Fauna Indica, 1795, p. 16. <sup>1</sup>/<sub>m</sub> Lacépède,  
Hist. Nat. Poiss., vol. 3, 1802, pp. 382, 399  
(on Houttuyn). <sup>1</sup>/<sub>m</sub> Schneider, Syst. Ichth.  
Bloch, 1801, p. 79 (Japan). <sup>1</sup>/<sub>m</sub> Fowler and  
Ball, Bull. Bishop Mus., no. 26, 1925, p.  
11 (French Frigate Shoal; Johnston Island).

Upeneus japonicus Cuvier, Hist. Nat.  
Poiss., vol. 3, 1829, p. 460 (Japan).

Mulloides japonicus Günther, Cat.  
Fishes Brit. Mus., vol. 1, 1859, p. 404



— Sauvage, Hist. Madagascar,  
Poiss., p. 518, 1891 (reference).

— Elera, Cat. Fauna Filipinas, vol. 1,  
p. 511, 1895 (Manila Bay; Luzon).

— Jordan and Seale, Bull. Bur.  
Fisher., vol. 26, p. 14, 1906 (1907)  
(Cavite). — Evermann and Seale,  
Bull. Bur. Fisher., vol. 26, p. 65,  
1906 (1907) (San Fabian; Bulacan).  
— Jordan and Richardson, Bull.  
Bur. Fisher., vol. 27, p. 250, 1907  
(1908) (Manila).



~~Fishes. Compared with two species~~  
~~referred to this differs in the~~  
presence of a third dark transverse  
bar at the origin of the soft dorsal  
on the back. Its dark opercular  
spot is another point of difference.  
The young of this species are much more  
contrasted than the adult; with the dark  
spot at the second dorsal origin quite  
small, the other dark vertical bands  
extend further down on the side and  
the third sometimes extends diffusely to  
the dark spot at the bases of the last anal  
rays. Also the soft dorsal has a subbasal  
dark band longitudinally and the soft  
anal a basal band of dusky.



— Bean and Weed, Proc. U. S. Nat. Mus.,  
vol. 42, p. 600, Aug. 30, 1912 (Batavia).

— Weber, Siboga Exped., vol. 57, Fische,  
p. 394, 1913 (Lombok; Siau).

— Barnard, Ann. South African Mus.,  
vol. 21, pt. 2, p. 542, Oct. 1927 (Delagoa  
Bay).

Caranx auratus Weber, Zool. Forschungen  
Semon, vol. 8, p. 106, 1895  
(error).



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Iris pale or whitish, with neutral gray above, except where crossed by medial dark lateral band. Fins all pale brownish, dorsals slightly dusted with deeper brown; soft dorsal and anal each with deep brown subbasal longitudinal line or narrow band, extending little outward or posteriorly on fins.

Philippines, China, Japan.

6 examples. D. 5361. Corregidor Light, V.  $89^{\circ}$  W. 7.2 miles ( $14^{\circ} 24' 15''$  N.,  $120^{\circ} 41' 30''$  E.), Manila Bay, Luzon. February 9, 1909. Length 65 to 80 mm.



Caranx (Carangoides) armatus  
Klunzinger, Fische Roth. Meer.,  
 vol. 1, p. 99, 1884.

— Weber and Beaufort, Fish. Indo  
Austral. Archip., vol. 6, p. 233, 1931  
 (Chias; Semarang; Lombok; Siau;  
 Ambon).

Caranx (Citula) armatus Wakaya,  
Ann. Carnegie Mus., vol. 15, p. 169, 1924  
 pl. 20, fig. 1,  
 (Formosa; Ceylon).



Scales with  
scale, 11 or 12 basal radiating striae;  
80 to 82 apical denticles, with  $\frac{1}{2}$  to 4  
transverse series of basal elements; ~~and~~  
circuli moderately fine.

D. VII - I, 9, I, third spine  $2\frac{1}{4}$  to  $2\frac{1}{3}$  in  
total head length, first branched ray  
 $1\frac{2}{5}$  to  $1\frac{1}{2}$ ; A. II, 8, I, second spine  
3 to  $3\frac{1}{4}$ , first branched ray  $1\frac{3}{4}$  to  $1\frac{4}{5}$ ;  
caudal  $1\frac{1}{5}$  to  $1\frac{1}{3}$ , little emarginate  
behind; least depth of caudal  
peduncle  $2\frac{3}{4}$  to 3; pectoral  $1\frac{2}{5}$  to  $1\frac{1}{2}$ ;  
ventral  $1\frac{1}{2}$  to  $1\frac{3}{5}$ .

Light brown, paler below, side  
of trunk and head with silvery  
sheen. Deep brown median lateral  
band from snout tip, through eye to  
caudal and out over fin medially.  
Another deep brown band above  
medial from above opercle to upper  
surface of caudal peduncle, narrower.



Carangoides armatus Bleeker,  
 Nat. Tijds. Ned. Indië, vol. 18,  
 p. 354, 1859 (Bawean); Verslag.  
 Kon. Akad. Wet. Amsterdam,  
 vol. 12, p. 64, 1861 (Penang).

— Fowler, Proc. Acad. Nat. Sci.  
 Philadelphia, vol. 77, p. 217, 1925  
 (Delagoa Bay); vol. 79, p. 272, 1927  
 (Orion; Philippines); Mem.  
 Bishop Mus., vol. 10, p. 151, 1928  
 (compiled); vol. 11, no. 5, p. 326, 1931  
 (reference); Proc. Acad. Nat. Sci.  
 Philadelphia, vol. 86<sup>1934</sup>, p. 448  
 (Katal); vol. 87, p. 141, 1935 (Bangkok; Paknam).



21543. Subig Bay. January 7, 1908. Length 83 mm.

A546. Sulade Island. September 17, 1909. Length 246 mm.

5723, 8397, 8398. Surigao, Mindanao. May 8, 1908. Length 168 to 287 mm.

7151. Teomabel Island. September 18, 1909. Length 185 mm.

18752. Tili, Lubang Island. July 14, 1908. Length 160 mm.

5132. Usada Island near Jolo. March 5, 1908. Length 230 mm.

6644, 17719. Varadero Bay, Mindoro. July 23, 1908. Length 27 to 222 mm.

□ Ten examples. The two blackish lateral blotches present even in the smallest  
□ examples.

8519. Verde del Sur Island. April 6, 1909. Length 264 mm.

7115. West coast Palau Island. November 18, 1908. Length 177 mm.

6954. West coast Sabtan Island. November 1, 1908. Length 255 mm.

5987. Zamboanga market. May 26, 1908. Length 393 mm. Silvery gray, anteriorly

dusky and top of head with slightly olivaceous shades, under surfaces whitish. Iris silvery. Lips pink, inside greenish scarlet. Small red upper lateral blotch on opercle. Dorsals gray, upper parts vermilion. membranes of soft dorsal clear vermilion. Anal gray, membranes somewhat orange. Caudal gray, tips slightly vermilion. Pectoral dusky hyaline orange. Ventral gray, slightly orange at tip.

6007. Zamboanga market. May 1908. Length 300 mm. Dusky olive gray above,

□ white below. Inside mouth scarlet. Opercle without scarlet blotch.

Dorsal mottled with vermilion and other fins with slight vermilion shades.

A965. Binang Unang Island, Gulf of Tomini, Celebes, Dutch East Indies.

□ November 17, 1909. Length 298 mm.

A949. Dodepo and Pasejogo Islands, Gulf of Tomini, Celebes. November 16, 1909.

Length 283 mm.

A1493. Kait Point, Libani Bay, Celebes. December 29, 1909. Length 230 mm.



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Citula plumbea Quoy and Gaimard,  
Voy. Uranie, Zool., p. 361, 1824  
(type locality, Mauritius).

Caranx plumbeus Jordan and Seale,  
Bull. Bur. Fisher., vol. 25, p. 233,  
fig. 28, 1905 (1906) (Apia; Pago  
Pago). — Fowler and Bean,  
Proc. U. S. Nat. Mus., vol. 62, art. 2,  
1922, p. 20 (reference).

Caranx (Citula) plumbeus Wakuiya,  
Ann. Carnegie Mus., vol. 15, p. 171, pl. 20,  
fig. 3, 1924 (Kii; Ryukyu; Formosa).



8 pt. Lead  
Follow—Incl Caps

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5234, 11188, 11189. Carmahala Bay, Ragay Gulf, Luzon. March 11, 1909. Length  
75 to 228 mm. 5 examples.

10606, 20271. Cataingan Bay, Masbate Island. April 18, 1908.

16090, 16091. Cataingan Bay. May 14, 1909. Length, 253 to 260 mm.?

5510. Catbalogan, Samar Island. April 15, 1908. Length, 278 mm. Back pale

olive-green, borders of scales olive, center of each scale with paler  
spot; general color whitish below, though scales largely with gray borders;  
bronze on middle of side on lateral line and below large dusky blotch about  
twice size eye diameter in length. Top of head olive, side more or less  
washed with bronze. Iris silvery and dusky. Dorsals dull vermilion, soft  
rays greenish. Anal clear vermilion on membranes, rays greenish. Caudal  
vermilion over olive, with obscure pale bars near base. Paired fins with  
hyaline membranes, rays more or less orange.

16090, 16091. Cataingan Bay. May 14, 1909. Length, 253 to 260? mm.

5510. Catbalogan, Samar Island. April 15, 1908. Length, 278 mm.

12828. Cavite and San Roque market. June 27, 1908. Length, 100 mm.

6426. Caxisigan Island. January 3, 1908. Length, 220 mm.

7513, 12272, 12273. Chase Head, Endeavor Strait, Palawan Island. December 22,  
1908. Length, 222 to 263 mm.

7543, 10687, 12875, 12876, 20282. Cotobato, Mindanao. May 20, 1908. Length,  
74 to 190 mm.

8545. Cuyo Harbor. April 9, 1909. Length, 313 mm.

8541. Dalaganem Island, Palawan. April 8, 1909. Length, 265 mm.

21349. Davao, Mindanao. May 16, 1908. Length, 170 mm.

5737. Generale Island, Capunuyugan Point, east coast of Mindanao. May 9,  
1908. Length, 275 mm.

9103 to 9105. Gigoso Point, Quinapundan Bay, Samar Island. July 28, 1909.

Length, 290? to 320 mm.



Citula ciliaria Rüppell, Atlas  
Reise nördl. Afrika, Fische, p. 102,  
pl. 25, fig. 8, 1828 (type locality,  
Massana, Red Sea). ~~Massana~~

~~Reise Madag., Fische, p. 156, 1845~~

~~Madag.~~

Caranx ciliaris Richardson, Ichth.  
China and Japan, p. 2676, 1846  
(Sea of China).

Cuvier, Hist. Nat. Poiss., vol. 9, p. 129,  
1833 (Pondicherry; Java). — Bleeker,

Nat. Geneesk. Arch. Ned. Indië, vol.  
2, p. 517, 1845 (Batavia). — Jerdon,

— Schlegel, Fauna Japonica, Poiss., pts. 5-6,  
p. 112, 1844 (Japan).

Madras Journ. Lit. Sci., p. 137, 1851.



Lethrinus semicinctus is described as elongate. Face reddish, back brown, below white. Ten or ~~twelve~~<sup>12</sup> longitudinal lines on flanks, formed as row of black spots, more distinct above lateral line. Opposite first dorsal rays on middle of side large black spot. Back crossed by six narrow blackish bands, indistinct below lateral line and form blackish semicircles. Fins reddish. Length 200 mm.

8140. Alibijaban Island, Ragay Gulf, Luzon. March 6, 1909. Length 418 mm.

21838, 21839. Atulayan Bay, Luzon. June 17, 1909. Length 54 to 78 mm.

5793. Baganga Bay, Mindanao. May 13, 1908. Length 222 mm.

6500. Balikias Bay, Luzon. July 17, 1908. Length 278 mm.

8690. Batag Island, Luzon. June 3, 1909. Length 389 mm.

6742. Beach at village near Chase Head, Endeavor Strait, Palawan. December

22, 1908. Length 98 mm.

8960. Between Paron and Jesus Points, Albay Gulf, Luzon. June 21, 1909.

Length 580 mm.

8619 to 8620. Biri Channel. June 1, 1909. Length 250 to 294 mm.

14504. Biri Channel. June 2, 1909. Length 238 mm.

6788. Bolinao Bay, Luzon. May 10, 1909. Length 145 mm.

9413. Busin Harbor, Burias Island. Length 151 mm.

7099, 7100. Busin Harbor. March 8, 1909. Length 160 to 168 mm.

4898, 8352 to 8354. Buang Bay, Talajit Island, between Samar and Masbate.

March 15, 1909. Length 205 to 275 mm.

7874. Cagayan de Jolo. January 8, 1909. Length 305 mm.

20104 [1077] and 21945. Cagayan, Sulu Island. January 8, 1909. Length 112

to 116 mm. More or less irregular transverse dark bars. Distinct dark

lateral blotch. Fins orange or vermilion terminally.

8377. Calangaman Island. March 16, 1909. Length 410 mm.



Caranx (Citula) ciliaris Waksuza,  
Ann. Carnegie Mus., vol. 15, p. 172,  
pl. 21, 1924 (Ryukyu; Formosa).



344  
Amia kiensis Jordan and Snyder

Apogon kiensis Jordan and Snyder,  
Proc. U. S. Nat. Mus., vol. 23, 1901, p. 905,  
fig. 9. Wakanoura, province of Ki,  
Japan. — Jordan and Hubbs, Mem.  
Carnegie Mus., vol. 10, no. 2, 1925, p. 231  
(Misaki).

Amia kiensis Snyder, Proc. U. S. Nat.  
Mus., vol. 42, 1912, p. 412 (Shimizu). —  
Jordan and Thompson, Mem. Carnegie  
Mus., vol. 6, no. 4, 1914, p. 247, fig. 20  
(Misaki). — Seale, Philippine Journ.  
Sci., vol. 9, 1914, p. 64 (Hong Kong). —  
Fowler and Bean, Proc. U. S. Nat. Mus.,  
vol. 62, 1922, p. 26 (Philippines).



Carangoides ciliaris Bleeker,  
Verlag. Kon. Akad. Wet. Amsterdam,  
vol. 14, p. 109, 1862.

— Fowler, Proc. Acad. Nat. Sci. Philadelphia,  
vol. 87, p. 141, 1935 (Bangkok).



Depth  $2\frac{2}{3}$  to  $2\frac{3}{4}$ ; head  $2\frac{1}{4}$  to  $2\frac{1}{2}$ , width  $2\frac{1}{4}$  to  $2\frac{1}{3}$ . Snout  $4\frac{1}{2}$  to 5 in head from snout tip; eye  $3\frac{1}{4}$  to  $3\frac{3}{5}$ , greater than snout or interorbital; maxillary reaches  $\frac{3}{4}$  to  $\frac{4}{5}$  in eye or about opposite hind pupil edge, expansion  $1\frac{7}{8}$  to 2 in eye, length  $1\frac{9}{10}$  to 2 in head; villiform teeth in bands in jaws, on vomer and present or absent on each palatine; interorbital  $5\frac{1}{5}$  to  $5\frac{1}{2}$  in head, nearly level; preopercle with ridge entire, hind edge minutely denticulate; preorbital entire. Gill rakers 7+15, lanceolate, greatly longer than gill filaments or  $1\frac{3}{5}$  in eye.

Scales 22 or 23 in lateral line to caudal base or 4 more on latter, 2 above, 6 below, 5 or 6 predorsal; 2 rows on cheek. Tubercles in lateral line large, well exposed and each with <sup>small</sup> basal



Carany citula Cuvier, Hist. Nat. Poiss.,  
vol. 9, p. 126, ~~pl. 259~~, 1833 (type  
locality not given; Red Sea; New  
Guinea). — Kner, Reise Novara,  
Fische, p. 156, 1865 (Java).



August 9, 1908. Length 34 to 52 mm.  
4 examples.

18855. Hong Kong market. October 19,  
1908. Length 104 mm.



1503

Citula citula <sup>Cuvier</sup> ~~Valenciennes~~, Hist. Nat.  
Pois., vol. 11, p. 21, 1833 (type  
locality, Red Sea; New Guinea).

Carangoides citula Bleeker, Nat. Tijds.  
ned. Indie, vol. 2, p. 210, 1851  
(Beloeckomba); vol. 3, p. 445, 1852  
(Banka), p. 690 (Wahai); Verh.  
Batavia. Genoot. (makreel.), vol.  
24, p. 65, 1852 (Batavia); (Nat. Ichth.  
Japan), vol. 25, p. 15, 1853 (reference);  
Nat. Tijds. ned. Indie, vol. 5, p.  
234, 1853 (Ceram); vol. 6, p. 457,  
1854 (Amboina); vol. 7, p. 228,  
1854 (Manado, Celebes), p. 312 (Anger,  
Tjiringin); vol. 8, p. 345, 1855  
(Tiboe, Sumatra), p. 393 (Amboina),  
p. 437 (Bonthaian, Celebes); vol. 9, p.  
394, 1855 (North Pasuruan); Act.  
Soc. Sci. Ind. Néerl., vol. 1, no. 3, p.  
4, 1856 (Manado), p. 7 (Macassar);



8108, 19265. Alimango Bay, Burias Island. March 5, 1909. Length 232 to 243 mm. Somewhat olivaceous above, fading pearly silvery gray, with center of each scale somewhat lighter than border. Breast and belly white. Lemon-yellow bar extends from above pectoral posteriorly, includes most of caudal and caudal peduncle but becomes obsolete sometime after death. Top of head and preorbitals dark olive, with bronze shades; inside mouth and mouth corners scarlet. Vertical fins clear vermilion. Pectorals very slightly vermilion. Ventrals pale.

7730. Baganga Bay. May 13, 1908. Length 193 mm.

A504. Balukbaluk Island. September 12, 1909. Length 303 mm.

8714. Batan and Rapurapu Islands. June 5, 1909. Length 305 mm.

8639, 8667, 23725 [1567]. Iri Channel. June 1-2, 1909. Length 153 to 328 mm. [8667.] Body without red coloration. No preorbital bar. Vertical fins very pale vermilion. [1567.] Largely grayish green. Broad bronze or yellowish band from above pectoral base to caudal. Head washed with bronze. Dorsal and anal clear vermilion. Caudal yellowish, vermilion at edges and tip. Paired fins very pale pink.

18478 [963], 18790. Bolalo Bay, Palawan. December 21, 1909. Length 144 to 160 mm. [963.] No blotches or stripes. Head with brassy reflections. Caudal yellow, vermilion shades at tip, other fins more or less vermilion.

12453, 14801. Bugsuk Island, Balabac. January 5, 1909. Length 174 to 188 mm.

6699, 5627, 8060, 8366. Busin Harbor, Burias Island. April 22, 1908. Length 190 to 205 mm. [5599.] Above each scale with yellowish-green center, borders brownish, below centers paler or silvery and borders more indistinct and yellowish. Side of body with 4 broad orange longitudinal bands below lateral line with interspaces pale yellowish green. Above lateral line obscure parallel band. Breast and belly white. Head olive above, cheek with bronze reflections; crimson band down hind limb of preopercle and front of opercle; opercle flap crimson; crimson tinge below eye; lips pink inside mouth and premaxillary membranes scarlet; iris golden with upper eyelid vermilion. Dorsal olive and brown, membranes tipped vermilion; soft dorsal with membranes clear vermilion. Anals dusky lemon yellow, with orange edge to soft fin. Caudal dusky and vermilion. Pectoral pale yellow membranes clear. Ventral yellowish, front edges dusky.



vol. 1, no. 5, p. 6, 1856 (Amboina);  
vol. 3, no. 9, p. 2, 1857-58 (Padang,  
Sumatra), p. 3 (Trusan), p. 5  
(Priaman); Nat. Tijds. Ned.  
Indie, vol. 16, p. 407, 1858 (Japara,  
Java); vol. 17, p. 143, 1858-59  
(Boeling, Bali); Act. Soc. Sci.  
Ind. Néerl., vol. 5, no. 8, p. 2, 1858-  
59 (Tobariri, Celebes); Nat. Tijds.  
Ned. Indie, vol. 19, p. 435, 1859  
(Sumbawa); Act. Soc. Sci. Ind.  
Néerl. (Sumatra), vol. 8, p. 12, 1859  
(Benculen); Nat. Tijds. Ned.  
Indie, vol. 21, p. 138, 1860 (Muntok,  
Banda).



Scales 45 or 46 in lateral line to caudal base and 2 more on latter; 6 above, 14 or 15 below, 9 predorsal; caudal and pectoral bases finely scaled.

Scales with 17 to 22 basal radiating striae, with 2 or 3 incomplete auxiliaries; 102 to 130 apical denticles with 10 to 12 transverse series of basal elements; circuli very fine.

*lit*  
D. X, 9, I, fourth spine 3 to  $3\frac{1}{3}$  in head, fourth ray  $2\frac{3}{4}$  to 3; A, III, 8, I, third spine  $3\frac{2}{5}$  to  $3\frac{4}{5}$ , second ray  $2\frac{4}{5}$  to  $3\frac{3}{5}$ ; caudal  $1\frac{1}{4}$  to  $1\frac{1}{3}$ , deeply emarginate; least depth of caudal peduncle  $2\frac{4}{5}$  to  $3\frac{1}{5}$ ; pectoral  $1\frac{1}{6}$  to  $1\frac{1}{4}$ ; ventral  $1\frac{1}{2}$  to  $1\frac{2}{3}$ .

Brown, body nearly uniform. Head drab-brown, darker than body color, except pale opercles, which like body. Each row of scales above lateral line with dark streak. Below lateral line each row of scales with traces of similar parallel lines, most distinct on chest, above anal and about gill opening. Fins brownish, with indistinct blotches of darker on dorsals and as several obscure transverse bands on caudal. Paired fins uniform dull brown. Iris yellowish brown. Also several scales on opercle above dark drab-brown.

East Indies, Philippines. Compared with Weber's figure my examples do not show the dark ventral or anal, though in most every other way they agree. The species appears to be distinguished by its coloration, especially in the longitudinal rows of dark spots on the body scales. Weber's two examples were 385 to 490 mm. long.

*f*  
A515. Bulan Island. September 13, 1909. Length, 338 mm. Scales on side of body mostly with pale median spot. Head olive, with yellowish wash; opercular flap brilliant scarlet; little scarlet in premaxillary membranes but none on opercular membranes. Dorsals clear crimson; front spinous portion largely olive, also showing as spots in posterior basal portion. Anal membranes orange terminally, more yellowish olive basally. Caudal membranes similar to soft dorsal but not so bright. Paired fins pale brassy; pectorals scarlet at base and in axil, first ray somewhat slaty.



Cuvier

Citula cirrhosus (Ehrenberg) Cuvier,  
Hist. Nat. Poiss., vol. 9, pl. ~~244~~ 250,  
1833 (type locality, Red Sea).

Olistus ruppelii Cuvier, Hist. Nat.  
Poiss., vol. 9, p. 144, 1833 (on  
Citula ciliaria Rüppell).  
pl. 25, fig. 8, 1828

~~Cuvier~~

Olistus malabaricus Cuvier, Hist.  
Nat. Poiss., vol. 9, p. 137, pl. 251, 1833  
(~~part~~ type locality, Seychelles):  
(precluded by Scomber malabaricus  
Bloch).

Citula seriolineus Thiollière, Fauna  
Woodlark, p. 174, 1857 (type locality,  
Woodlark Island).



Body rather pale brown, lower surface whitish. Each scale on body, at least on back and sides, with darker margin. Head rather dull drab-brown above and on sides, below pale to whitish. Iris yellowish brown. Hind border of gill opening little darker brown than adjoining color. Below last dorsal spine or front dorsal rays, close below lateral line, a large dusky neutral to blackish blotch 7 to 9 scales long and about 4 deep. Fins pale brown.

Red Sea, Madagascar, India, East Indies, Philippines, Australia, Micronesia, Melanesia, Polynesia. My series of specimens shows the quite variable eye often small in the young and large in larger examples. The species may be known by the characteristic large dark blotch, always greater than the eye, above the end of the depressed pectoral fin. In profile the head is deep, though with rather projected snout. It is well figured by Günther as Lethrinus bahamensis. Rüppell's figure of Lethrinus harak shows the dark lateral blotch only one scale in width and on the second row of scales below the lateral line. Some preserved specimens show each scale with a distinct pale or light median spot. Others are quite slender and greatly like Lethrinus leutjanus in profile line. My specimens all agree in the size of the large dark lateral blotch, and though it is often extended beyond the tip of the depressed pectoral fin it usually is close up with the lateral line, sometimes even on the row of scales. I have seen no examples like Lethrinus atkinsoni Seale. At least one example (9203) has the black lateral blotch over the posterior half of the depressed pectoral, one row of scales below the lateral line, but not extending beyond the tip of the fin.

Lethrinus elongatus is described very briefly as compared with L. variegatus, with the body long and the snout more pointed. Body gray-green on back, white below. Fins red, dorsal with blue spots. Length, 305 mm.



Caranx rastrosus Jordan and Snyder,  
 Mem. Carnegie Mus., vol. 4, no. 2,  
 p. 37, pl. 31, 1908 (type locality,  
 Takao, Formosa; Cavite, Philippines).  
 — Jordan and Richardson, Mem.  
 Carnegie Mus., vol. 4, no. , p. 178, 1909  
 (Takao).

Citula rastrosus Oshima, Philippine  
 Journ. Sci., vol. 26, no. 3, p. 393, March  
 1925 (Takao and Toko, Formosa).

Caranx atropus (not Schneider)  
Fowler and Bean, Proc. U. S. Nat.  
 Mus., vol. 62, art. 2, 1922, p. 21  
 (young Takao specimen).

→ Citula pescadorenses Oshima, Philippine  
 Journ. Sci., vol. 26, no. 3, p. 395, pl. 1 fig.  
 2, March 1925 (type locality, Bako,  
 Pescadore Islands, Formosa).



Follow—Incl Cons  
Leaded

type locality:

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Lethrinus bonhamensis GÜNTHER, Journ. Mus. Godeffroy, vols. 2-3, pts.

① 5-6, 1874, p. 65. (Bonham Island). - JORDAN and SEALE, Proc. U.S. Nat. Mus., vol. 28, 1905, p. 782 (Negros).

Lethrinus banhamensis GÜNTHER, Journ. Mus. Godeffroy, vols. 2-3, pts. 5-6, 1874, pl. 47.

Lethrinus bonhamensis POHL, Cat. Mus. Godeffroy, No. 9, 1884, p. 29 (Tonga). (Error)

Lethrinus papuensis ALLEYNE and MACLEAY, Proc. Linn. Soc. New South Wales, vol. 1, 1876, p. 276, pl. 8, fig. 1. (Hall Sound, New Guinea). type locality:

Depth  $2\frac{3}{3}$  to  $2\frac{4}{5}$ ; head  $2\frac{3}{4}$  to 3; width 2 to  $2\frac{1}{6}$ . Snout 2 to  $2\frac{1}{3}$  in head; eye  $3\frac{1}{2}$  to  $4\frac{2}{5}$ ,  $1\frac{3}{4}$  to  $2\frac{3}{5}$  in snout, greater than interorbital in young to  $1\frac{1}{5}$  with age; maxillary reaches opposite front nostril, length  $2\frac{2}{5}$  to 3 in head; lips moderate, coriaceous; teeth villiform, in broad bands in front of jaw, outer row enlarged and mostly conic with 4 front ones in each jaw canines and last 4 each side molar-like, but often with slight median longitudinal groove; interorbital  $3\frac{2}{3}$  to 4 in head, broadly convex; naked region of head with skin finely rugose. Gill rakers 5 + 5, low, broad tubercles, about  $1\frac{1}{2}$  gill filaments.

Scales 45 or 46 in lateral line to caudal base and 2 more on latter; 6 above, 14 or 15 below, 9 or 10 predorsal; caudal and pectoral bases finely scaled. Scales with 12 to 15 basal radiating striae, sometimes 4 to 9 incomplete auxiliaries; 113 to 171 apical denticles, with 4 to 8 transverse series of basal elements; circuli fine.

D. X, 9, I, fourth spine  $2\frac{3}{4}$  to  $3\frac{1}{10}$  in head, fourth ray  $2\frac{2}{3}$  to  $2\frac{7}{8}$ ; A. III, 8, I, third spine  $3\frac{1}{3}$  to  $3\frac{4}{5}$ , first ray  $2\frac{7}{8}$  to  $3\frac{1}{3}$ ; caudal  $1\frac{1}{3}$  to  $1\frac{2}{5}$ , emarginate; least depth of caudal peduncle 3 to  $3\frac{1}{10}$ ; pectoral  $1\frac{1}{10}$  to  $1\frac{1}{8}$ ; ventral  $1\frac{2}{5}$  to  $1\frac{1}{2}$ .



Caranx (Citula) schlegelii Waksya,  
Ann. Carnegie Mus., vol. 15, p. 170,  
pl. 20, fig. 2, 1924 (type locality,  
Nagasaki; Iiwajima; Formosa).

Caranx (Citula) uii Waksya, Ann.  
Carnegie Mus., vol. 15, p. 174, pl. 22,  
fig. 1, 1924 (type locality, Kii;  
Nagasaki; Ryukyu).

Olistus hedlandensis Whitley, Rec.  
Austral. Mus., vol. 19, no. 2, p. 156,  
fig. 2, March 26, 1934 (type locality,  
Port Hedland, north-western Australia).



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4546 [D. 5593]. Mt. Putri, N.  $52^{\circ}$  W.,  
17.2 miles ( $4^{\circ}02'40''$  N.,  $118^{\circ}11'20''$  E.),  
Sibuko Bay, Borneo. In 38 fathoms.  
September 29, 1909. Length 65 mm.

23125 to 23128, <sup>23370.</sup> Sandakan Bay, Borneo.  
March 2, 1908. Length 58 to 86 mm.  
25 examples.

7 examples. Sandakan Market,  
Sandakan, Borneo. March 2, 1908.  
Length 60 to 75 mm.

22 examples. [D. 5644.] Makassar Island,  
N.  $4^{\circ}$  E., 1.3 miles ( $5^{\circ}27'24''$  S.,  $122^{\circ}38'00''$   
E.), Buntan Strait. In 22 fathoms.  
December 16, 1909. Length 41 to 45 mm.

[D. 5303]. China Sea ( $21^{\circ}44'$  N.,  $114^{\circ}48'$  E.),  
vicinity of Hongkong. In 34 fathoms.  
August 9, 1909. Length 35 to 50 mm.  
21 examples.

[D. 5304]. China Sea ( $21^{\circ}46'$  N.,  $114^{\circ}47'$  E.),  
vicinity of Hongkong. In 34 fathoms.



1808

Depth  $1\frac{3}{4}$  to 2; head  $3\frac{1}{5}$  to  $3\frac{1}{4}$ , width  $1\frac{4}{5}$  to 2. Snout  $3\frac{1}{10}$  to  $3\frac{1}{2}$  in head from snout tip; eye 3 to  $3\frac{4}{5}$ ,  $1\frac{1}{8}$  to  $1\frac{1}{5}$  in snout,  $1\frac{1}{5}$  to  $1\frac{1}{4}$  in interorbital, adipose lids marginal; maxillary reaches  $\frac{1}{3}$  in eye, expansion 2 to  $2\frac{1}{8}$  in eye, length  $2\frac{1}{4}$  to  $2\frac{1}{3}$  in head from snout tip; interorbital  $2\frac{7}{8}$  to  $3\frac{1}{3}$ , convexly elevated. Gill rakers 12 + 22, lanceolate, equals gill filaments or  $1\frac{2}{3}$  in eye.

Scales 70 + 34 or 35 in lateral line, straight section  $1\frac{1}{3}$  to  $1\frac{2}{5}$  in arch. Scales moderate, absent from breast far back as vent. Circuli 48 + 35 to 37, converging, not united at median axis.



1809

D. I, VIII - I, 21, I or I, 22, I, fourth spine  $2\frac{1}{8}$  to  $2\frac{1}{5}$  in total head length, first ray elongate, filiform,  $1\frac{2}{3}$  to 2 in fish without caudal, tip reaches middle of caudal peduncle, or middle of caudal base in young; A. II - I, 18, I, first ray  $1\frac{1}{4}$  to  $1\frac{3}{5}$  in head, with age 2 to  $2\frac{1}{4}$  in fish without caudal; least depth of caudal peduncle 5 to 6; ventral  $1\frac{2}{5}$  to 2; caudal 3 in rest of fish, forked; pectoral reaches straight section of lateral line;  $1\frac{4}{5}$  to caudal base, fin  $2\frac{2}{5}$  to  $2\frac{1}{2}$  in fish without caudal, rays II, 17.

Back brown, below silvery white. Marginal blackish opercular blotch not quite deep as eye.



1810

Fins gray terminally, filaments and spinous dorsal edge dusky. Ventral gray terminally blackish in young.

Red Sea, Arabia, Zanzibar, Portuguese East Africa, Madagascar, Mauritius, Seychelles, India, Ceylon, Malaya, East Indies, Philippines, Siam, Tonkin, China, Formosa, Japan, Western Australia, Queensland, Melanesia, Polynesia. Easily known by its long soft dorsal and anal anterior ray in each fin, more prolonged than in Wakiya's figure of Caranx (Citula) schlegelii. The Citula percadorensis Oshima was described with a small head 3.85 and body depth 1.89 on a specimen 126 mm long.



20730. Balayan Bay, Taal.

January 19, 1908. Length 114 mm.

Lower Gill rakers 16. A. II - I, 17.  
13864 [1873].

13863, Cebu market. August 31,  
1909. Length <sup>145 to</sup> 155 mm. Lower gill  
rakers 15<sup>or 16</sup>. A. II - I, 18.

10694. Cotabato, Mindanao. May 20,  
1908. Length 113 mm. Lower gill rakers  
18. A. II - I, 17.

One examples. Lingayen Gulf  
(east of Port Guecet), west coast of  
Luzon. May 11, 1909. Length 60 mm.  
Depth  $1\frac{2}{3}$ . Lower gill rakers 19.  
A. II - I, 18.

11600. Manila ~~at~~ market. March  
16, 1908. Length 128 mm. Lower gill  
rakers 15. A. II - I, 18.

20820, 20821. Palawan Bay, Mindoro.  
December 11, 1908. Length 143 to 153 mm.  
Lower gill rakers 15. A. II - I, 17.

One example. Port San Vicente,  
Palani River. November 14, 1908.  
Length 38 mm. Lower gill rakers 16.  
A. II - I, 17.



along upper sides of head. Barbels  
pale brown.

Red Sea, Arabia, Zanzibar,  
Natal, Mauritius, Reunion, Madagascar,  
India, East Indies, Philippines,  
Riu Kiu, Melanesia, Micronesia,  
Polynesia, Hawaii. Distinguished,  
aside from its coloration, by the  
long barbels, usually reaching the  
ventral fins. Herre and Montalban  
have separated Mullus chryserydros  
Lacépède chiefly on account of its  
violaceous or purplish coloration,  
retaining uniform orange red or  
yellowish white specimens as Mullus  
cyclostomus. This contention may be  
eventually found justified, though it  
is difficult, if not impossible, to  
identify preserved materials accordingly.  
The figure of type of Mullus cyclostomus



6584, 6591 to 6594. Por San  
Vicente. November 18, 1908. Length  
40 to 180 mm. Lower gill rakers 16.  
A. II - I, 17 or 18.

A1007. Locality not given. Length 104  
mm. Depth  $1\frac{4}{5}$ . Lower gill rakers 21.  
A. II - I, 18.

12232. Hokuho, Sooran, Formosa.  
January 29, 1910. Length 155 mm.  
Lower gill rakers 16. A. II - I, 17.

9966. Kowloon, China. September  
18, 1908. Length 133 mm. Lower gill  
rakers 16. A. II - I, 16.



2 to 4 tubules). Scales with 5 to 11  
basal radiating striae; 95 to 159  
apical denticles, with 5 or 6 transverse  
series of basal elements; circuli fine.

D. VIII — I, 8, I, third spine  $1\frac{1}{2}$  to  $1\frac{2}{3}$   
in head, first branched ray  $2\frac{1}{4}$  to  
 $2\frac{1}{3}$ ; A. II, 6, I, first branched ray  
 $2\frac{1}{4}$  to  $2\frac{3}{5}$ ; caudal  $1\frac{1}{5}$  to  $1\frac{1}{3}$ , deeply  
forked, lobes pointed; least depth of  
caudal peduncle  $2\frac{3}{4}$  to  $2\frac{4}{5}$ ; pectoral  
 $1\frac{2}{5}$  to  $1\frac{1}{2}$ ; ventral  $1\frac{1}{4}$  to  $1\frac{2}{5}$ .

Pale brown generally, slightly  
lighter below. Iris yellowish brown,  
with golden circle around pupil.  
Fins all pale brown. Soft dorsal  
and anal with traces of 5 or 6  
horizontal darker brown lines than  
general color of fins. Some specimens  
also show as many longitudinal  
gray or pale narrow lines longitudinally.



U. S. N. M., no. 72226, Cavite,  
Philippines. R. C. Mc Gregor.  
Length 198 mm.

U. S. N. M., no. 72603, Java.  
O. Bryant and W. Palmer.  
Length 159 mm.

U. S. N. M., no. 76612, Takao,  
Formosa. Dr. Fred Baker. Length  
43 mm.



SCHMELTZ, Cat. Mus. Godeffroy, No. 7, 1879, p. 40 (Viti). - POHL, Cat. Mus. Godeffroy, No. 9, 1884, p. 29 (South Seas). - KLUNZINGER, Fische Roth Meer., 1884, p. 40. - DAY, Fauna Brit. India, Fishes, vol. 2, 1889, p. 41. - JORDAN and SEALE, Bull. Bur. Fisher., vol. 25, 1905(1906), p. 270 (Apia). - STEINDACHNER, Sitz. Ber. Akad. Wiss. Wien, Math.-nat. Kl., vol. 115, pt. 1, 1906, p. 1385 (*Savaii*). - EVERMANN and SEALE, Bull. Bur. Fisher., vol. 26, 1906(1907), p. 86 (Jolo, Bacon, San Fabian). - SEALE and BEAN, Proc. U.S. Nat. Mus., vol. 35, 1907, p. 244 (Zamboanga). - JORDAN and DICKERSON, Proc. U.S. Nat. Mus., vol. 34, 1908, p. 611 (Suva, Fiji). - KENDALL and GOLDSBOROUGH, Mem. Mus. Comp. Zool., vol. 26, 1911, p. 289 (Suva, Kusaic, Vavau). - PELLEGRIN, Bull. Soc. Zool. France, vol. 39, 1914, p. 229 (Diego Suarez and Mahambo, Madagascar). - PEARSON, Ceylon Administr. Rep., 1915-1918, p. F14. - FOWLER and BEAN, Proc. U.S. Nat. Mus., vol. 62, 1922, p. 40 (Zamboanga). - FOWLER, Bishop Mus. Bull., No. 22, 1925, p. 12 (Guam), p. 33 (Samoa). - PERRE and MONTALBAN, Philippine Journ. Sci., vol. 33, No. 4, Aug. 1927, p. 413, pl. 3, fig. 2 (Lima, Iba, Manila Bay, Puerto Galera, Pinamalayan, Bacon, Bantayan, Cebu, Canigao Island, Dumaguete, Cagayan de Misamis, Canigaran, Balabac, Zamboanga, Samal, Davao, Tawi Tawi, Subic Bay; Guam). - FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1927, p. 281 (Orion, Calapan); Mem. Bishop Mus., vol. 10, 1928, p. 214 (Shortland Island, Faté, Guam, New Guinea, Kusaic, Suva, Vavau, Apia).

Letrinus harak ELERA, Cat. Fauna Filip., vol. 1, 1895, p. 482 (Luzon, Manila, Batangas, Nasugbu).

Lethrinus rhodopterus BLEEKER, Nat. Tijds. Nederland. Indië, vol. 3, 1852, p. 65. (Singapore).

type locality:



A. N. S. P., three examples.  
Delagoa Bay, Portuguese East  
Africa. 1922. H. W. Bell Marley.  
Length 147 to 250 mm.

A. N. S. P., one example. Orion,  
Philippines. 1923. Rev. Joseph  
Clement. Purchased.

A. N. S. P., two examples. Philippines.  
Commercial Museum of Philadelphia.



No. 5802 U.S.N.M. Zamboanga. Dr. E.A. Mearns. Length 198 to 284 mm. 3 examples.

No. 65903 U.S.N.M. Suva, Fiji. Bureau of Fisheries (No. 08867). Length 126 mm.

No. 65905 U.S.N.M. Tonga Island. Bureau of Fisheries (No. 05870). Length 52 to 123 mm. 2 examples. As Lethrinus richardsonii.

No. 65906 U.S.N.M. Truk, Carolines. Albatross collection, 1900. Length 32 to 49 mm. 6 examples; very poor condition. As Lethrinus richardsonii.

No. 72094 U.S.N.M. Nafa, Okinawa, Riu Kiu. Bureau of Fisheries. Length 210 mm.

No. 52799 A.N.S.P. Orion, Bataan, Philippines. May 9, 1923. Rev. Joseph Clemens. Length 153 mm.

6 pt. Figure 2 @  $\frac{1}{m}$ . Lethrinus harak (Forskål), young

Lethrinus harak (Forskål)

Figure 2 ← 8 pt. u

Sciaena harak FORSKÅL, Descript. Animal., 1775, pp. XII, 52, (Arabia). - BONNATERRE, Tabl. Ichth., 1788, p. 124 (Red Sea). - GMELIN, Syst. Nat. Linn., vol. 1, 1789, p. 1304 (Arabia). - WALBAUM, Artedi Pisc., vol. 3, 1792, p. 312 (on FORSKÅL).

Sparus harak SCHNEIDER, Syst. Ichth. Bloch, 1801, p. 276 (copied). - LACÉPÈDE, Hist. Nat. Poiss., vol. 4, 1802, pp. 34, 111 (Red Sea).

Lethrinus harak RÜPPELL, Neue Wirbelth., Fische, 1835, p. 116, pl. 29, fig. 3 (Djedda). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 1, 1859, p. 458 (Red Sea). - KNER, Reise Novara, Fische, 1865, p. 81 (Sydney). - KLUNZINGER, Verh. zool. bot. Ges. Wien, vol. 20, 1870, p. 755 (Koseir, Red Sea). - DAY, Fishes of India, pt. 1, 1875, p. 137, pl. 33, fig. 3. - MARTENS, Preuss. Exped. Ost-Asien, 1876, p. 187 (Ternate). - BLEEKER, Atlas Ichth. Ind. Néerland., vol. 8, 1876-1877, p. 119, pl. (49)327, fig. 3 (Sumatra, Singapore, Java, Bawean, Obi major, Banda, Solor, Ceram, Waigiu). -



Carangoides chrysophrys (Cuvier)

Caranx chrysophrys Cuvier, Hist. Nat. Poiss., vol. 9, p. 77, pl. 247, 1833 (type locality, Seychelles). — Kner, Reise Novara, Fische, p. 155, 1865 (Java).

— Boulenger, Proc. Zool. Soc. London, (1887) p. 661.

— Sauvage, Hist. Madagascar, Poiss., p. 328, pl. 31, fig. 4, 1891 (type), p. 518 (reference).

— McCulloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 136, April 21, 1915 (20 miles off Bustard Head, Queensland, 20 fathoms).



Follow—Incl. Cases  
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Argyrops edita OSHIMA, Jap. Journ. Zool., Trans. Abstracts, vol. 1, No. 5, March 31, 1927, p. 143, fig. 4 (Keeling, East China Sea).

Pagrus ciliaris VON BONDE, South Afric. Fisher. Marine Biol. Surv., Rep. No. 1, 1923, p. 19, pl. 5.

Argyrops bleekeri OSHIMA, Jap. Journ. Zool., Trans. Abstracts, vol. 1, No. 5, March 31, 1927, p. 141 (Toko, Tainan).

Chrysophrys rubroptera TIRANT, Service Océanogr. Pêch. Indo Chine, 6<sup>e</sup> Note, 1929, p. (9) 14(168) (Hué River, Annam).

Depth  $1\frac{3}{4}$  to  $1\frac{7}{8}$ ; head  $2\frac{4}{5}$  to 3, width 2. Snout  $1\frac{2}{3}$  to  $2\frac{2}{5}$  in head; eye 3 to  $3\frac{2}{5}$ ,  $1\frac{2}{5}$  in snout, subequal with interorbital; maxillary reaches eye, expansion 3 in eye, length  $2\frac{1}{2}$  to 3 in head; teeth biserial, front ones conic, posterior molars; interorbital  $3\frac{1}{8}$  to  $3\frac{4}{5}$ , broadly convex. Gill rakers 7 + 10, short, lanceolate,  $\frac{1}{3}$  of gill filaments which  $1\frac{1}{2}$  in eye.

Scales 50 to 53 in lateral line to caudal base and 4 more on latter; 7 or 8 above, 16 to 18 below, 20 to 45 predorsal, 4 or 5 rows on cheek. Scales with 8 to 11 basal radiating striae; 30 to 90 apical denticles, rather obtuse; circuli fine.

D. XI or XII, 10, I or 11, I, third to sixth spines end in long slender filaments reaching beyond caudal or equal combined head and body or even entire fish, second ray  $2\frac{1}{5}$  in head; A. III, 8, I, second spine  $2\frac{2}{3}$ , first ray  $2\frac{1}{4}$ ; caudal 1 to  $1\frac{1}{10}$ , emarginate; least depth of caudal peduncle  $2\frac{2}{5}$  to  $2\frac{1}{2}$ ; ventral  $1\frac{1}{10}$  to  $1\frac{1}{3}$ ; pectoral  $2\frac{3}{5}$  in combined head and body to caudal base.

Back pale brownish, below paler to whitish. Fins all pale brownish. Iris whitish. Ventral and anal with little brownish medially and subterminally.



— Barnard, Ann. South Afric. Mus.,  
vol. 21, pt. 2, p. 540, Oct. 1927 (Natal;  
Mozambique).



Amia quadrifasciata (Cuvier)

Apogon quadrifasciatus Cuvier, Hist. Nat. Poiss., vol. 2, 1828, p. 153. Pondicherry.

— Cantor, Cat. Malayan Fishes, 1850, p. 3.

— Peters, Arch. Naturg., 1855, p. 234

(Mozambique). — Günther, Cat. Fishes

Brit. Mus., vol. 1, 1859, p. 239 (India,

Fiji, China, Australia). — Guichenot,

Notes Ile Réunion, vol. 2, 1862, p. 23. —

Kner, Reise Novara, Zool., vol. 1, pt. 5,

1865, p. 43 (Java and Sydney). — Day,

Fishes of India, pt. 1, 1855, p. 59. —

Károli, Termesz. Füzetek, Budapest,

vol. 5, 1882, p. 152 (Sarangoon, Singapore;

Canton). — Meyer, Ann. Soc. Españ. Hist.

Nat. Madrid, vol. 14, 1885, p. 12 (Manila

Bay). — Day, Fauna Brit. India, vol.

1, 1889, p. 494. — Pellegrin, Bull. Soc.

Zool. France, vol. 30, 1905, p. 85 (Tonkin).

[Elera, Cat. Fauna Filip., 1895, p. 470 (Luzon, Manila Bay).]



Caranx (Citula) chrysophrys Wakiya,  
Ann. Carnegie Mus., vol. 15, p. 186,  
~~1924~~ pl. 24, fig. 1, 1924 (Jordan and  
Evermann's example).

Caranx (Carangoides) chrysophrys  
Weber and Beaufort, Fishes Indo  
Austral. Archip., vol. 6, p. 239, 1931  
(n. sp.).



24003. Hitanki Reef, Borneo. September 24, 1909. Length 66 mm.

24076. Tomahu Island, Bouru.

December 12, 1909. Length 33 to 68 mm,  
12 examples.

6 examples. Tomahu Island.

December 11, 1909. Length 36 to 67 mm.

23400. Dodepo and Tasejogo Islands,  
Gulf of Tomini, Celebes. November 16,  
1909. Length 66 mm.

23684 to 23688. Gammo Island.

December 3, 1909. Length 54 to 66 mm.



Citula chrysophrys Bleeker, Ned.  
Ned. Dierk., vol. <sup>Recht.</sup> 4, p. 132, 1873 (1874)  
(reference); Faune Madagascar,  
Pollen et Van Dam, Poiss., pt. 4,  
p. 99, 1874 (reference).

— Ogilby, Mem. Queensland Mus.,  
vol. 3, p. 77, pl. 24, 1915 (off Pine  
Peak and Bowen).



Nat. Linn., vol. 1, 1789, p. 1273 (Red Sea). - WALBAUM, Artedi Pisc.,  
vol. 3, 1792, p. 99 (on FORSKAL). - SCHNEIDER, Syst. Ichth. Bloch,  
1801, p. 281 (Red Sea). - LACÉPÈDE, Hist. Nat. Poiss., vol. 4, 1802,  
pp. 29, 97 (Arabia). - BLEEKER, Atlas Ichth. Ind. Néerland., vol.  
7, (1873-1876, pl. (35)313, fig. 3; vol. 8, 1876-1877, p. 109 (Celebes)  
- FOWLER, Proc. Acad. Nat. Sci. Philadelphia, 1925, p. 234 (Delagoa  
Bay); Journ. Bombay Nat. Hist. Soc., vol. 30, No. 4, Nov. 1926, p. 8  
(Bombay); vol. 32, No. 2, Oct. 20, 1927, p. 259 (Bombay).

Sparus (Pagrus) spinifer KLUNZINGER, Fische Roth. Meer., 1884, p. 43.

Pagrus spinifer VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p. 156,

(Red Sea; Pondicherry). - RÜPPELL, Neue Wirbelth., Fische, 1835, p. 114

(northern Red Sea). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 1,

1859, p. 472 (China). - MARTENS, Verh. zool. bot. Ges. Wien, vol. 16,

1866, p. 378 (Mirsa Eli, Red Sea). - KLUNZINGER, Verh. zool. bot. Ges.

Wien, vol. 20, 1870, p. 761 (Koseir, Red Sea). - DAY, Fishes of India,

pt. 1, 1875, p. 138, pl. 33, fig. 5; Suppl. 1888, p. 787; Fauna Brit.

India, vol. 2, 1889, p. 42, fig. 16. - ELEMA, Cat. Fauna Filip., 1895,

p. 483 (Cebu). - REGAN, Journ. Bombay Nat. Hist. Soc., vol. 16, No. 2,

1905, p. 330 (Persian Gulf). - STEINDACHNER, Denkschr. Akad. Wiss.

Wien, Math.-nat. Kl., vol. 71, pt. 1, 1907, p. 135 (Geschin, South

Arabia).

ZUGMAYER, Abh. Bayer. Akad. Wiss., Math.-phys. Kl., vol. 26, pt. 6,

1913, p. 11 (Mekran). - PELLEGRIN, Bull. Soc. Zool. France, vol. 39,

1914, p. 229 (Nossi Bé, Madagascar). - BAMBER, Journ. Linn. Soc.

London, Zool., vol. 31, 1915, p. 481 (Sudanese Red Sea). - PEARSON,

Ceylon Administr. Rep., 1915-1918, pp. F9-F13, F15-F18. - GILCHRIST

and THOMPSON, Ann. Durban Mus., vol. 1, pt. 4, 1917, p. 363 (refer-

ences). - MALPAS, Ceylon Administr. Rep., 1921, pp. E5-E8. - FOWLER

and BEAN, Proc. U.S. Nat. Mus., vol. 62, 1922, p. 40 (Takao). - HERRE

and MONTALBAN, Philippine Journ. Sci., vol. 33, No. 4, Aug. 1927, p.

428, pl. 8, fig. 2 (Manila). - BARNARD, Ann. South Afric. Mus., vol.

21, 1927, p. 696 (Natal coast, Delagoa Bay, 74 fathoms).



Carangoides chrysophrys Fowler,  
Proc. Acad. Nat. Sci. Philadelphia,  
vol. 86, (1934) p. 448 (Durban, Natal);  
vol. 87, p. 142, 1935 (Bangkok; Siam).



Chrysophris CUVIER, Règne Animal, ed. 2, vol. 2, (1829, p. 18. (Type

Sparus aurata LINNAEUS, designated by JORDAN and EVERMANN, Genera of Fishes, pt. 1, (1917, p. 128.)

Daurada STARK, Elements Nat. Hist., Edinburgh, vol. 1, 1828, p. 465.

Type Sparus aurata LINNAEUS, tautotypic.)

Chrysoblephus SWAINSON, Nat. Hist. Animals, vol. 2, (1839, p. 221. (Type

Sparus gibbiceps CUVIER, monotypic.)

Caeso GISTEL, Naturges. Thierr., 1848, p. viii. (Type, Sparus aurata

LINNAEUS, virtually, as Caeso GISTEL proposed to replace Chrysophris CUVIER.)

Eudynama GISTEL, Naturges. Thierr., 1848, p. xiii. (Type, Sparus aurata

LINNAEUS, virtually, as Eudynama GISTEL proposed to replace Chrysophris CUVIER.)

Acanthopagrus PETERS, Arch. Naturg., 1855, pt. 1, p. 242. (Type Chrysophris

vagus PETERS, monotypic.) No description.

Pagrichthys BLEEKER, Nat. Tijds. Nederland. Indie, vol. 21, 1860, p. 60.

(Type, Pagrichthys castelnaui BLEEKER, monotypic.)

Jaws with 4 to 6 conic canines anteriorly and rounded molars in 3 or 4 series in each posteriorly. No teeth on palate. Branchiostegals 6. Air bladder sometimes notched or with very short appendages. Pyloric coeca 3 or 4. Scales moderate. Cheeks scaly. Dorsal spines 11 or 12, depressible in groove, never greatly elongated. Anal spines 3.

Coasts of Africa and the Indo Pacific. According to Barnard, Pagrichthys Bleeker is based on "a mutilated specimen with only 2 anal spines". The Atlantic Pagrus Cuvier has been separated from Sparus by Jordan and Thompson "as the species are olive and silvery in color, never red, and the teeth are in broader bands, the upper molars in three or more series".



Caranx chrysophrys var. hyemalis  
Richardson, Ichth. China and  
 Japan, p. 275, 1846 (type locality,  
 Chinese Seas; Seychelles).

Carangoides chrysophryoides  
Bleeker, Nat. Tijds. Ned. Indie,  
 vol. 1, p. 366, 1850 (type locality,  
 Batavia); Verh. Batavia. Genoot.  
 (makreel.), vol. 24, p. 63, 1852  
 [Batavia].

Caranx chrysophryoides Günther,  
 Cat. Fish. Brit. Mus., vol. 2, p. 452,  
 1860 (on Bleeker). — Perugia, Ann.  
 Mus. Civ. Stor. Nat. Genova, ser. 2, vol. 7,  
 p. 274, 1889.



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Red Sea, Arabia, Persian Gulf, Delagoa Bay, Madagascar, Mauritius, India, Ceylon, East Indies, Philippines, Indo China, China, Formosa, Japan.

In life this fish is generally pink with (4 or 5) deeper broad transverse bars across body and the fins pale or transparent.

1 example

U.S.N.M. □ Takao, Formosa. Dr. Fred Baker. Length 210 mm.

1 example, A.N.S.P. □ Delagoa Bay, Portuguese East Africa. H.W. Bell Marley.

Length 84 mm.

1 example, A.N.S.P. □ Bombay. Bombay Natural History Society. Length 103 mm.

Genus Sparus Linnaeus ← 130

Sparus LINNAEUS, Syst. Nat., ed. 10, vol. 1, 1758, p. 277. (Type, Sparus

aurata LINNAEUS, designated by BLEEKER, Arch. Néerland., Sci. Nat.

Harlem, vol. 11, 1876, p. 281.)

Cynaedus GRONOW, Zoophylacii, 1762, p. 60. Species non-binomial. (Type

Sparus aurata LINNAEUS, designated by JORDAN, Smiths. Publ., No. 1938,

July 1910, p. 49.)

Synagris KLEIN, Ges. Schauplatz, vol. 1, 1775, p. 442. Species non-

binomial. (Type, Sparus aurata LINNAEUS, designated by JORDAN and EVER-

MANN, Genera of Fishes, pt. 1, 1917, p. 38.) (Inadmissible.)

Mylio (COMMERSON) LACÉPÈDE, Hist. Nat. Poiss., vol. 3, 1802, p. 131.

(Type, Sparus mylio LACÉPÈDE, tautotypic.) (Inadmissible.)

Aurata (not CATESBY, 1771) OKEN, Isis, 1817, p. 1183. (Type, Sparus aurata

LINNAEUS, virtually tautotypic, as based on Les Daurades CUVIER,

Règne Animal, vol. 2, 1817, p. 272.)

Chrysophrys QUOY and GAIMARD, Voy. Uranie, Zool., Dec. 18, 1824, p. 299.

(Type, Sparus aurata LINNAEUS.)



— Gilchrist and Thompson, Ann.  
South African Mus., vol. 6, pt. 3,  
p. 242, 1909 (Durban Bay); Ann.  
Durban Mus., vol. 1, pt. 4, p. 384,  
May 21, 1917 (reference) -



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axil line and ends as small black blotch at caudal base. Two golden umber bars across opercle and subopercle. Iris with sapphire blue reflections. First dorsal spines washed with opalescent silvery in front, remaining vertical fins pale pink. Pectoral pale pink. Ventral greenish yellow, pinkish toward front. Larger example without bars on opercle but with row of 3 golden umber dots from lower eye edge across cheek to subopercle. Several similar dots on opercle. Axil stripe series of golden dots. Upper stripes brown, also



Caranx nigrescens Day, Proc. Zool.  
Soc. London, p. 704, 1867 (type  
locality, near Madras); Fishes  
of India, pt. 2, p. 223, pl. 50, fig. 6,  
1876 (Madras); Suppl., p. 780, 1888;  
Fauna British India, Fishes, vol.  
2, p. 164, 1889.

Carangichthys typus (not Bleeker)  
Gilchrist and Thompson, Ann. South  
African Mus., vol. 6, pt. 3, p. 244,  
1909 (Natal); Ann. Durban Mus.,  
vol. 1, pt. 4, p. 388, May 21, 1917  
(reference).



275

broken into spots. Blue stripe across preorbital.

23279, 23423. Tutu Bay, first anchorage, Jolo Island. September 19, 1909. Length 46 to 105 mm. 16 examples.

20693. Ulugan Bay, near Baheli River mouth, Palawan Island. December 28, 1908. Length 86 mm.

23345 to 23347. Daisy Island west of Bumbum, Trusan Tando Bulon, British North Borneo. January 6, 1910. Length 92 to 99 mm.

23123. Danawan and Si Amil Island, Borneo. September 27, 1909. Length 56 mm.



Caranx malabaricus (not Schneider)  
Bean and Weed, Proc. U. S. Nat.  
Mus., vol. 42, p. 600, Aug. 30, 1912  
(Batavia).



ray pink.

24093 [165]. Tatan. February 20,  
1908. 10 examples. Length 58 to 90 mm.

2 examples. Inquil Island, south of Zamboanga. September 14, 1907. <sup>Length 70 mm.</sup>

8026 [346], 8027, 8037 [345], 8038 [344].

Length 60 to 65 mm.

Tumindao Island. February 26, 1908.

Length 62 to 102 mm. Pale olive green  
with yellowish overshades, in front of  
vent below white washed with pale  
chrome. Median brown stripe on  
forehead surrounding dorsal fin.  
Another begins at snout tip, passes  
above eye just above lateral line,  
ends under and just behind dorsal  
axil. Third more distinct black  
line crosses snout and middle of  
premaxillary, passes backward on



1824

Depth  $2\frac{1}{5}$  to 2; head  $2\frac{4}{5}$  to  $3\frac{4}{5}$ ,  
width  $2\frac{1}{4}$ . Snout  $2\frac{1}{3}$  to 3 in  
head; eye 4 to  $4\frac{1}{2}$ ,  $1\frac{1}{3}$  to 2 in  
snout,  $1\frac{1}{5}$  to  $1\frac{1}{4}$  in interorbital,  
adipose lids marginal though  
not invading iris; maxillary  
reaches  $\frac{7}{8}$  to eye to  $\frac{1}{4}$  in eye,  
~~length~~ expansion  $1\frac{3}{4}$  in eye,  
length  $2\frac{1}{4}$  to  $2\frac{1}{3}$  in head,  
interorbital  $3\frac{1}{5}$  to  $3\frac{1}{3}$ , convexly  
elevated, with median occipital  
keel. Gill rakers 6 + 15 to 18,  
lanceolate,  $\frac{1}{2}$  of eye; gill filaments  
 $\frac{4}{5}$  of gill rakers.

Scales 67 to 69 + 23 to 30 in  
lateral line, straight section  
 $1\frac{1}{2}$  in arch. Chest and breast to  
pectoral and ventral bases, also  
beyond latter to vent, naked.



D. I, VIII - I, 18, I to I, 22, I, third  
erect spine 2 to  $2\frac{7}{8}$  in head, first  
branched ray 1 to  $2\frac{1}{5}$ ; A. II - I, 16, I  
to I, 18, I, first branched ray  
 $2\frac{1}{4}$  to  $2\frac{1}{3}$ ; caudal  $1\frac{1}{5}$ , deeply  
forked; least depth of caudal  
peduncle 8; ventral  $1\frac{3}{5}$  to  $1\frac{2}{3}$   
times head; pectoral  $1\frac{1}{4}$  to  $2\frac{7}{8}$ ,  
rays II, 18.

Back brown, sides and  
below pale, evidently whitish.  
Slate black spot on opercle  
above posteriorly, about half  
size of pupil. Fins brown.

Arabia, Mozambique, Natal,  
Madagascar, Seychelles, India,  
East Indies, Queensland, Formosa,  
China Seas. Closely resembles  
Carangoides malabaricus and  
differing chiefly in its fewer gill



rakers. It agrees also in the long pectoral fin which reaches about opposite first third in base of anal fin. In Carangoides caeruleopinnatus, another very similar species, also with but 16 to 18 lower gill rakers, but its pectoral slightly less than head as shown in Wakiya's figure of Citula (Citula) caeruleopinnata and the opercle without a dark blotch. Though Wakiya's figure does not show a dark opercular blotch his description says "opercular spot brown, not distinct."



1927

22716, 22718. Balayan Bay, Luzon.  
January 19, 1908. Length 118 to 134 mm.  
Lower gill rakers 17 or 18.

Two examples [1846, 1847.] Cebu  
market. August 28, 1909. Length  
68 to 77 mm.

One example. Lingayen Gulf, west  
coast of Luzon. May 11, 1909. Length  
85 mm. Lower gill rakers 16. Dorsal  
filament  $1\frac{3}{5}$  in total length, anal  
filament 2.

20989. Little Santa Cruz, Zamboanga.  
May 26, 1908. Length 72 mm. Lower  
gill rakers 17.

11599. Manila market. March 16, 1908.  
Length 74 mm. Lower gill rakers 17.

11910. Manila market. December  
12-18, 1907. Length 83 mm. Lower gill  
rakers 18.

Five examples. Mansalay, Mindoro.  
January 24, 1908. Length 71 to 83 mm.  
Lower gill rakers 17.

7301, 20854. Mansalay. June 4, 1908.  
Length 68 to 74 mm. Lower gill rakers  
16 to 17.



Can 179

Johnius bleekeri (Steindachner)  
Pseudolithus bleekeri Steindachner,  
Verhandl. zool. bot. Gesell. Wien, vol. 16,  
1866, p. 773, pl. 14, fig. 4. Hong Kong.

Depth  $2\frac{4}{5}$ ; head 3. Snout 4 in head;  
eye  $4\frac{1}{4}$ ,  $1\frac{1}{10}$  in snout; lower jaw  
slightly shorter; maxillary reaches  
opposite hind eye edge, length  $2\frac{1}{6}$  in head;  
upper outer row of teeth enlarged of  
which 6 anterior slightly canine like,  
inner lower row of teeth larger than others  
in mandible; interorbital rather low;  
preopercle edge serrate.

Scales 49, <sup>in lateral line</sup> to caudal base; 8 above,  
12 below (8 above anal base in figure);  
predorsal scales extend forward to snout



One example. Hato River tidal.

1828

June 18, 1909. Length 52 mm. Lower gill rakers 17.

Four examples. Hato, Luzon.  
June 19, 1909. Length 55 to 65 mm.

11424. Hogas Point, Panay. February 4, 1908. Length 78 mm. Lower gill rakers 16.

One example. Parang, Mindanao.  
May 23, 1908. Length 58 mm.

19700, 19701. Port Janelo, Luzon.  
July 13, 1908. Length 85 to 88 mm.  
Lower gill rakers 16 or 17.

20539, 20540. Tilig, Lubang Island.  
July 14, 1908. Length 78 to 98 mm.  
Lower gill rakers 17.

One example. D. 5611. Bulsa Bulsa Island (E.) S.  $43^{\circ}$  W., 6.4 miles (lat.  $0^{\circ}40'30''$  S., long.  $121^{\circ}50'00''$  E.), Gulf of Zamini, Celebes. November 19, 1909.  
Length 14 mm.

11466. Kowloon, China. September 8, 1908. Length 88 mm.

One example. No data. Length 87 mm.  
Lower gill rakers 17.



only one known," they could not have  
known of the above specimens, received  
in the U. S. National Museum many  
years previously and identified as  
Sciaena japonica.



U. S. N. M., No. 72601. Batavia, Java.

D. Bryant and W. Palmer. Length  
278 mm. (caudal tips broken).

Is Caranx malabaricus.



Follow — Ind. G. 134789  
Leaded 272

The following four nominal species, imperfectly known, may belong in the present genus:

Sparus coracinus (Valenciennes) — *opt*

*pe* Chrysophrys coracinus VALENCIENNES, Hist. Nat. Poiss., vol. 6, (1830, p. 133)

*q* 133. (Three miles off Mauritius.)  
*type locality*

*cl* Back red. Breast yellowish. Head rosy, marbled with fine black streaks. Upper lip blue, also opercular limb. Spinous dorsal black, soft dorsal reddish. Caudal yellowish. Anal and pectoral yellow. (Valenciennes.)

Sparus madagascariensis (Valenciennes) — *opt*

*pe* Chrysophrys madagascariensis VALENCIENNES, Hist. Nat. Poiss., vol. 6,

(1830, p. 135. (Fort Dauphin, Madagascar). — GUICHENOT, Mém. Soc. Sci.

*cl* Nat. Cherbourg, ser. 2, vol. 2, (1866, p. 145 (Madagascar). — JOUAN,

Mém. Soc. Sci. Nat. Cherbourg, ser. 2, vol. 5, (1870, p. 166) (Seychelles).

*pe* Sparus madagascariensis BLEEKER, Nederland. Tijdschr. Dierk., vol. 1,

*q* (1863, p. 344 (Madagascar).

*pe* Body evenly oval, somewhat narrowing toward tail. Snout more pointed than in most species of genus. Teeth bordering jaw very strong and curved. D. XI, 13, shallow. A. II, 8. Caudal forked. Pectoral pointed. Color apparently uniform, deeper on back. On drawing by Commerson. (Valenciennes.)



Carangoides coeruleo-pinnatus (Rüppell)

Caranx coeruleo-pinnatus Rüppell,  
Atlas Reise nördl. Afrika, Fische,  
p. 100, ~~1828~~ 1828 (type locality,  
Ojedda, Red Sea); Neue Wirbelth.  
Fische, p. 47, pl. 13, fig. 2, 1835 (Ojedda).  
— Cuvier, Hist. Nat. Poiss., vol. 9, p.  
1833 (part).

Caranx (Citula) caeruleopinnatus Wakajima,  
Ann. Carnegie Mus., vol. 15, p. 179, pl. 25, fig. 1,  
1924 (Wakajima; Formosa).

Carangoides coeruleopinnatus  
Fowler, Proc. Acad. Nat. Sci.  
Philadelphia, vol. 86, p. 448,  
fig. 30 (young), 1934 (Durban,  
Natal).



5887, 6008. Zamboanga market. May 26-27, 1908. Length, 334 to 390 mm. [6008.]

Olivaceous and gray above. Inside mouth scarlet. Scarlet blotch above point of opercle. Dorsals with vermilion shades terminally and posteriorly. Other fins with very slight vermilion shades.

A1521, 9953. Doc Can Island. January 7, 1910. Length 175 to 227 mm.

No. 34798 U.S.N.M. Tahiti. Dr. W.H. Jones. Length, 151 mm. As Lethrinus miniatus.

No. 34801 U.S.N.M. Tahiti. Dr. W.H. Jones. Length, 233 mm. As Lethrinus miniatus.

No. 34815 U.S.N.M. Tempe, Marquesas. Dr. W.J. Jones. Length, 184 mm. As Lethrinus miniatus.

No. 55629 U.S.N.M. Jolo. Dr. E.A. Mearns, 1904. Length, 233 mm.

No. 56007 U.S.N.M. Luzon. Bureau of Fisheries (No. 3263). Length, 165 mm. Last 2 or 3 teeth more or less molar.

No. 56137 U.S.N.M. Bacon. Bureau of Fisheries (No. 3208). Length, 122 mm. As Lethrinus richardsonii.

No. 56171 U.S.N.M. Bacon. Bureau of Fisheries (No. 3205). Length, 107 mm. As Lethrinus richardsonii.

No. 5617 U.S.N.M. San Fabian. Bureau of Fisheries (No. 3826). Length, 138 mm. As Lethrinus variegatus. Although Evermann and Seale say "known by its slender body, long snout, and peculiar conical lateral teeth," this specimen agrees in color pattern with my other materials and in no way is like Bleeker's figures. It is doubtless slender due to wrapping or packing tightly in shipment.

No. 56181 U.S.N.M. Bacon. Bureau of Fisheries (No. 3206). Length, 123 mm. As Lethrinus richardsonii.

No. 56246 U.S.N.M. Bacon. Bureau of Fisheries (No. 3207). Length, 121 mm. As Lethrinus richardsonii.



Chrysophris CUVIER, Règne Animal, ed. 2, vol. 2, (1829, p. 18. (Type

Sparus aurata LINNAEUS, designated by JORDAN and EVERMANN, Genera of Fishes, pt. 1, (1917, p. 128.)

Daurada STARK, Elements Nat. Hist., Edinburgh, vol. 1, 1828, p. 465.

Type Sparus aurata LINNAEUS, tautotypic.)

Chrysoblephus SWAINSON, Nat. Hist. Animals, vol. 2, (1839, p. 221. (Type

Sparus gibbiceps CUVIER, monotypic.)

Caeso GISTEL, Naturges. Thierr., 1848, p. viii. (Type, Sparus aurata

LINNAEUS, virtually, as Caeso GISTEL proposed to replace Chrysophris CUVIER.)

Eudynama GISTEL, Naturges. Thierr., 1848, p. xiii. (Type, Sparus aurata

LINNAEUS, virtually, as Eudynama GISTEL proposed to replace Chrysophris CUVIER.)

Acanthopagrus PETERS, Arch. Naturg., 1855, pt. 1, p. 242. (Type Chrysophris

vagus PETERS, monotypic.) No description.

Pagrichthys BLEEKER, Nat. Tijds. Nederland. Indie, vol. 21, (1860, p. 60.

(Type Pagrichthys castelnaui BLEEKER, monotypic.)

Jaws with 4 to 6 conic canines anteriorly and rounded molars in 3 or 4 series in each posteriorly. No teeth on palate. Branchiostegals 6. Air bladder sometimes notched or with very short appendages. Pyloric coeca 3 or 4. Scales moderate. Cheeks scaly. Dorsal spines 11 or 12, depressible in groove, never greatly elongated. Anal spines 3.

Coasts of Africa and the Indo Pacific. According to Barnard, Pagrichthys Bleeker is based on "a mutilated specimen with only 2 anal spines". The Atlantic Pagrus Cuvier has been separated from Sparus by Jordan and Thoms "as the species are olive and silvery in color, never red, and the teeth are broader bands, the upper molars in three or more series".



Caranx malabaricus (not Schneider)  
Günther, Cat. Fish. Brit. Mus.,  
vol. 2, p. 436, 1860 (part). — Day,  
Fishes of India, pt. 2, p. 221, 1876  
(part).

Caranx (Carangoides) malabaricus  
Weber and Beaufort, Fish. Indo  
Austral. Archip., vol. 6, p. 237, 1931  
(part).



[D.5146]. Sulade Island,  $2.18^{\circ}$  W., 3.40 miles ( $5^{\circ}46'40''$  N.,  $120^{\circ}48'50''$  E.), Sulu Archipelago, vicinity of Siasi. In 24 fathoms. February 16, 1908. Length 38 mm.

1 example. Surigao, Mindanao. May 8, 1908. Length 62 mm.

2245 [D.5478]. Tacbac Point,  $S. 80^{\circ}$  W., 15.2 miles ( $10^{\circ}46'24''$  N.,  $125^{\circ}16'30''$  E.), Leyte. In 57 fathoms. July 29, 1909. Length 47 to 62 mm.

[D.5480]. Tacbac Point,  $S. 87^{\circ}$  W., 17.3 miles ( $10^{\circ}44'36''$  N.,  $125^{\circ}19'$  E.), Leyte. In 62 fathoms. July 29, 1909. Length 58 mm. 1 example.

3947 [D.5156]. Tinaksta Island,  $S. 77^{\circ}$  W., 3.40 miles ( $5^{\circ}12'50''$  N.,  $119^{\circ}55'55''$  E.), Sulu Archipelago, Tawi Tawi Group. In 18 fathoms. February 2, 1908. Length 48 mm.



Caranx<sup>gus</sup> armatus (not Forshäl) Jordan  
and Evermann, Proc. U. S. Nat.

Mus., vol. 25, p. 338, 1902 (~~Keen~~  
Formosa) — Evermann and Seale,

Bull. U. S. Fish Comm., vol. 26, p.  
65, 1906 (Jan. 11, 1907) (San Fabian;

part)  
# Caranx armatus ↙

Caranx formosanus Jordan and  
Snyder, Mem. Carnegie Mus., vol. 4,  
no. 2, p. 38, pl. 52, April 1, 1908  
(type locality, Takao, Formosa).

— Jordan and Richardson, Mem.  
Carnegie Mus., vol. 4, no. 4, p. 179,

Aug. 28, 1909 (type) — Oshima,

Philippine Journ. Sci., vol. 26,  
no. 3, p. 373, March 1925 (copied).



310

[D. 5132]. Off Panabutan Point,  
~~Salceda~~ h.  $31^{\circ}$  W., 0.50 mile, Sulu Sea  
off Western Mindanao. In 26 fathoms.  
February 6, 1908. Length 23 to 47 mm.  
12 examples.

24080 [D. 5152]. Pajumajan Island,  
N.  $2^{\circ}$  W., 2 miles ( $5^{\circ}42'55''$  h.,  $120^{\circ}15'45''$   
E.), Sulu Archipelago, Tawi Tawi Group.  
In 34 fathoms. February 18, 1908.  
Length 40 mm.

[D. 5442]. San Fernando Point Light,  
h.  $39^{\circ}$  E., 8.4 miles ( $16^{\circ}30'36''$  h.,  $120^{\circ}11'$   
 $06''$ ), west coast of Luzon. In 45 fathoms.  
May 11, 1909. Length 45 to 52 mm.  
29 examples.

[D. 5448]. San Miguel Point, h.  $23^{\circ}$  E.,  
1.5 miles ( $13^{\circ}23'10''$  h.,  $123^{\circ}45'19''$  E.),  
east coast of Luzon. In 47 fathoms.  
Length 47 to 63 mm. 6 examples.



Carany atropus (not Schneider)  
Bean and Weed, Proc. U. S. Nat.  
Mus., vol. 42, p. 599, Aug. 30, 1912  
(Batavia, Java) (part).

~~Carany atropus~~



34  
nearly colorless. Ventrals reddish brown except spine which white, inner margin also lighter, whitish continued on front edge to tip. Food apparently schizopods.

23683. Manila Harbor. January 4, 1908. Length 82 mm.

6 examples. Manila market. December 12 to 18, 1907. Length 71 to 89 mm. 6 examples.

19760 to 19762. Manila market. April 20, 1909. Length 82 to 93 mm. [1534.]

~~4546 [D. 5543] Ch. P. 1000~~

[D. 5235]. Hagubut Island, S. 58° W., 7 miles (9° 43' N., 125° 48' 15" E.), east coast of Mindanao. In 44 fathoms. May 9, 1908. Length 48 mm.

4543 [D. 5163]. Observation Island, N. 79° W., 6.70 miles (4° 59' 10" N., 119° 51' E.), Sulu Archipelago. In 28 fathoms. February 24, 1908. Length 42 mm.



Depth  $1\frac{7}{8}$  to 2; head 3 to  $3\frac{1}{5}$ , width 2 to  $2\frac{2}{5}$ . Snout  $2\frac{3}{5}$  to  $2\frac{3}{4}$  in head from snout tip; eye  $3\frac{3}{4}$  to  $4\frac{1}{2}$ ,  $1\frac{1}{3}$  to 2 in snout,  $1\frac{1}{4}$  to  $1\frac{1}{3}$  in interorbital, adipose eyelids narrow and marginal in young; maxillary reaches eye,  $\frac{1}{5}$  in eye in young, expansion  $1\frac{1}{2}$  to  $1\frac{7}{8}$  in eye, length  $2\frac{2}{5}$  to  $2\frac{3}{5}$  in head from snout tip; interorbital  $3\frac{1}{8}$  to  $3\frac{3}{4}$ , convexly elevated. Gill rakers 5 or 6 + 16 to 18, lanceolate, subequal with gill filaments or  $1\frac{1}{2}$  in eye.

Scutes 30 to 35 (21 to 30 beveled) in straight section of lateral line,  $1\frac{1}{2}$  to 2 in arch. Breast and chest naked, which area including pectoral and ventral bases and beyond.



*pal. lat.*  
D. X, 9, I, fourth spine  $2\frac{2}{3}$  to  $3\frac{2}{5}$  in head, fourth ray  $2\frac{1}{2}$  to  $2\frac{2}{3}$ ; A. III, 8, I, third spine  $2\frac{7}{8}$  to  $3\frac{1}{3}$ , second ray  $2\frac{1}{2}$  to 3; caudal  $1\frac{1}{2}$  to  $1\frac{1}{3}$ , deeply emarginate; least depth of caudal peduncle 3 to  $3\frac{1}{8}$ ; pectoral  $1\frac{1}{6}$  to  $1\frac{1}{4}$ ; ventral  $1\frac{1}{2}$  to  $1\frac{3}{5}$ .

Brown, on back and upper surfaces each scale with slightly darker border. Head below, belly and abdomen whitish. About 7 or 8 vertical diffuse slightly dark bands on back and sides, mostly as intensified dark edges to scales.

Iris gray brown. Dorsals and caudal grayish, other fins paler. Anal and ventrals more or less whitish.

Ceylon, East Indies, Philippines, China, Riu Kiu, Queensland, Micronesia, Melanesia, Polynesia. Known by its much more deeply emarginate or lunate caudal than in Lethrinus harak, also upper profile of snout slightly convex. The dark blotch at the end of the depressed pectoral is always with dark extending upwards and downwards, exactly as shown by Bleeker's figure. In small examples the caudal is less noticeably lunate.

Lethrinus reticulatus Valenciennes is based on an example but 100 mm. long. Head reddish, with 2 or 3 brown bands above the eye. Membranous border of opercle yellow. Body lighter than head, with irregular blackish spots.

Rays of soft vertical fins finely marked with blackish streaks.

17410. Candaraman Island. January 4, 1909. Length 95 mm.

7734 [1023]. Caxisigan Island. January 2, 1909. Length 214 mm.

9917. Inamucan Bay, Mindanao. August 8, 1909. Length 145 mm.

7292. Mansalay, Mindoro. June 4, 1908. Length 150 mm.

12750. North end of Endeavor Strait, Palawan. December 22, 1908. Length

148 mm.

8397. Surigao, Mindanao. May 8, 1908. Length 233 mm.



D. I, VIII - I, I, 20, I or I, I, 21,  
 third spine  $3$  to  $3\frac{1}{10}$  in total  
 head length, first branched  
 ray  $1\frac{1}{10}$  to  $1\frac{3}{5}$ ; A. II - I, 17, I,  
 first branched ray  $1$  to  $2$ ;  
 upper caudal lobe  $1\frac{1}{10}$  to  $1\frac{1}{8}$ ;  
 least depth of caudal peduncle  
 $7$ ; ventral  $2$  to  $2\frac{1}{8}$ ; pectoral  
 $2\frac{2}{5}$  to  $2\frac{4}{5}$  in fish without  
 caudal, rays II, 17.

Back brown, below pale to  
 whitish. Small example with  
 5 broad dark brown transverse  
 bands, little wider than pale  
 interspaces. Iris gray. Opercle  
 with large ventral black  
 blotch and edge of gill opening  
 pale. Dorsal and caudal  
 brownish, other fins whitish.

Red Sea, Natal, India, East Indies,  
 Philippines, Formosa, Japan.



Follow - Incl Caps

8-pt. Leaded

Lethrinus reticulatus Valenciennes

Lethrinus reticulatus VALENCIENNES, Hist. Nat. Poiss., vol. 6, 1830, p.

96, <sup>1830 type locality</sup> (New Guinea). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 1, 1859, p.

457 (compiled), <sup>1859</sup> - MARTENS, Preuss. Exped. Ost Asien, 1876, p. 387

(Larentuka, Flores). - BLEEKER, Atlas Ichth. Ind. Néerland., vol. 8,

1876-1877, p. 116, pl. (52)330, fig. 1 (Celebes, Ternate, Batjan,

Amboina, Banda, New Guinea). - KLUNZINGER, Sitz. Ber. Akad. Wiss.

Wien, Math.-nat. Kl., vol. 80, pt. 1, 1879, p. 357 (Endeavor River,

Port Denison). - MEYER, Anal. Soc. Españ. Hist. Nat., Madrid, vol. 14,

1885, p. 19 (Kordo, Mysore). - FOWLER, Proc. Acad. Nat. Sci. Phila-

delphia, 1927, p. 281 (San Fernando, Orion, Philippines); Journ.

Bombay Nat. Hist. Soc., vol. 32, No. 4, May 31, 1928, p. 709 (Ceylon);

Mem. Bishop Mus., vol. 10, 1928, p. 213 (Guam, Moen, Suva); Proc.

Acad. Nat. Sci. Philadelphia, 1929 (1930), p. 609 (Hong Kong), p.

<sup>1930</sup> 642 (Guam)

Lethrinus moensii BLEEKER, Nat. Tijds. Nederland. Indië, vol. 9, 1855,

<sup>1855 type locality</sup> p. 435, (Obi Major, Batjan). - GÜNTHER, Cat. Fish. Brit. Mus., vol. 1,

1859, p. 455 (Copang, Louisiades); Journ. Mus. Godeffroy, vol. 2-3,

pts. 5-6, 1874, p. 64, pl. 46A (Paumotu, Society, Friendly, Samoa,

Hervey, Kingsmills, Pelew, Louisiades, Molucca Islands). - BLEEKER,

Atlas Ichth. Ind. Néerland., vol. 8, 1876-1877, p. 115, pl. (19)297,

fig. 3 (Batjan, Obi Major, Timor). - SCHELTZ, Cat. Mus. Godeffroy,

No. 6, 1877, p. 12 (Pelew Islands). - POHL, Cat. Mus. Godeffroy, No.

9, 1884, p. 29 (Pelew Islands). - MEYER, Anal. Soc. Españ. Hist. Nat.,

Madrid, vol. 14, 1885, p. 19 (Kordo, Mysore). - EVERMANN and SEALE,

Bull. Bur. Fisher., vol. 26, 1906(1907), p. 86 (Bacon); Proc. U.S. Nat.

Mus., vol. 31, 1906(1907), p. 509 (Jolo).



San Fabian, (1836)

U. S. N. M., No. 56025. Luzon.

Bureau of Fisheries (3498). Length  
154 mm. A. I, 18, I. Gill rakers  
7+19. Pectoral  $1\frac{1}{8}$  times head,  
reaches straight section of  
lateral line. ~~Length 154 mm.~~  
As Caranx armatus.

U. S. N. M., No. 72600. Batavia,  
Java. April 2, 1909. O. Bryant  
and W. Palmer. Lower gill rakers  
19. A. I, 18. Length 73 mm.  
As Caranx atrifrons?

A. N. S. P., three examples.  
Surban, Natal. H. W. Bell-Marley.  
Length 138 to 200 mm.



8792. Butauanan Island, eastern Luzon. June 12, 1909. Length 362 mm.

8277, 18511 [1309] Cammahala Bay, Ragay Gulf, Luzon. March 11, 1909.

Length 42 to 224 mm. 15 examples. [1309.] Olive gray, with 9 dusky bars on side transversely, of which 3 on caudal peduncle; 4 pronounced stripes on lower side longitudinally, first immediately below lateral line, second through axial region and third and fourth at levels of pectoral base. Blood red shades on opercular margin. Vertical fins reddish terminally. Dorsal largely olivaceous. Paired fins slightly dusky, pectoral somewhat yellowish.

5543. Cataingan Bay, Masbate. April 18, 1908. Length 310 mm.

5 examples. Cataingan Bay. April 18, 1908. Length 52 to 79 mm. Show besides dark transverse bars also 5 or 6 longitudinal pale broad whitish bands.

10604, 10605, 10708, 10710. Cataingan Bay. April 19, 1908. Length 68 to 133 mm. 4 examples.

5495, 5496, 6819 to 6822, 7596, 15891. Catbalogan, Samar. April 14, 1908. Length 143 to 245 mm.

2 examples. Catbalogan. April 16, 1908. Length 47 to 53 mm. Small specimens such as these, usually with pectorals yellowish, frequently with little gray to neutral dusky, at least terminally; anal varies yellowish to brownish.

12827. Cavite and San Roque market. June 27, 1908. Length 95 mm.

7541, 7542, 7544, 10686, 10688 [1813] to 10690. Cotabato, Mindanao. May 20, 1908. Length 75 to 180 mm.

7566. Endeavor Strait, Palawan. December 28, 1908. Length 362 mm. Cheek

with 4 pale slaty to bluish bars. Similar larger bars transversely on side of body disappearing in alcohol when interspaces become somewhat orange to bronze. Bluish tints under and about eye. Fins more or less orange terminally. Pectoral yellowish, first ray bright blue. Ventral with front edge blue.



Carangoides malabaricus (Schneider) <sup>1837</sup>

Scomber malabaricus Schneider,  
Syst. Ichth. Bloch, p. 31, 1801  
(type locality, Tranquebar).



205

10 examples. Bacoor, Luzon. June 15, 1908. Length 61 to 83 mm.

20732. Balayan Bay, Taal anchorage, southern Luzon. January 19, 1908. Length 74 mm.

20387. Catbalogan, Samar. April 10, 1908. Length 58 mm.

23369. Catbalogan. April 15, 1908. Length 59 mm.

5969. Cavite market. December 1, 1908. Length 71 mm.

1 example. Cavite and San Roque markets. June 27, 1908. Length 35 mm.

<sup>4405</sup>  
[D.5099]. Corregidor Light, N.  $21^{\circ}$  E., 4.30 miles ( $14^{\circ}18'40''$  N.,  $120^{\circ}32'40''$  E.), off southern Luzon. <sup>In 30 fathoms.</sup> January 2, 1908. Length 62 mm.

5542 [D.5100]. Corregidor Light, N.  $16^{\circ}$  E., 5.70 miles ( $14^{\circ}17'15''$  N.,  $120^{\circ}32'40''$  E.), off southern Luzon. In 35 fathoms. January 2.



Caranx malabaricus Cuvier, Hist.

Nat. Poiss., vol. 9, p. 121, 1833

(Pondicherry); — Richardson, Ichth.

China and Japan, p. 275, 1846 (China  
Sea; Canton).

— Bleeker, Nat. Geneesk. Arch. Ned.

Indië, vol. 2, p. 517, 1845 (Batavia).

— Cantor, Journ. Asiatic Soc. Bengal,  
vol. 18, pt. 2, p. 1110, 1849 (1850)

(Pinang Sea; Malay Peninsula; Singapore).

— Jerdon, Madras Journ. Lit. Sci.,  
p. 137, 1851.

— Günther, Cat. Fish. Brit. Mus., vol. 2,  
p. 436, 1860 (Madras; Pinang Sea;  
Moluccas; China; Australia). —

Kner, Reise Novara, Fische, p. 153, 1865

(50 miles off Ceylon; Java). — Playfair,  
Fishes of Zanzibar, p. 60, 1866 (Seychelles).



306

another silvery stripe across eye and opercle. Lower side silvery, with about 8 dark bars between pectoral base and <sup>space</sup> opposite hind part of anal, equal in width to interspaces; these bars at times fading to show only very narrow lines corresponding to their margins. Cheek and lower opercle dusky below lowest silvery line. All chin silvery with deep pink iridescence. Throat and branchiostegal membranes white, with greenish reflections. Dorsal spines reddish toward tips. Soft dorsal reddish dusky with darker bars, followed by a dark one of reddish brown. Anal like soft dorsal, but more contrasted. Caudal plain dusky, except median stripe and somewhat darker purplish shades on upper and lower edges. Pectorals



— Klunzinger, Verh. zool. bot. Gesell.  
Wien, vol. 21, p. 463, 1871 (Red Sea).

— Day, Fishes of India, pt. 2, p. 221,  
pl. 50, fig. 2, 1876 (Madras); ~~suppl.~~  
~~p. 789, 18~~.

— Macleay, Proc. Linn. Soc. New South  
Wales, vol. 5, pt. 4, p. 533, 1881 (Australia).

— Károli, Termesz. Füzetek, Budapest,  
vol. 5, p. 160, 1881 (Canton).

— Day, Fauna British India, Fishes,  
vol. 2, p. 163, 1889; Fishes of India,  
Suppl., p. 780, 1888;

— Sauvage, Hist. Madagascar, Poiss.,  
p. 518, 1891 (reference). — Elera,  
Cat. Fauna Filipinas, vol. 1, p. 510, 1895  
(Luzon; Cavite; Santa Cruz).



307

December 13, 1909. Length 27 mm. 1 example.

4 examples. Manila Bay, Luzon.

December 9, 1909. Length 45 to 63 mm.

4 examples. Manila Bay. December 12, 1909. Length 25 to 33 mm.

7 examples. Manila Harbor. December 31, 1907 and January 1, 1908. Length 62 to 81 mm. Back dark olive. Median stripe of plum purple from snout tip to fork of caudal, slightly lighter in interspaces of bars on lower side. Narrower lighter stripe begins on snout, passes above eye, midway between bases of dorsals and dark median lateral band, and fading out on caudal peduncle. Still above and along bases of dorsals forward to nape a narrow silvery stripe; another silvery stripe between the 2 darker about twice as pupil, becomes very narrow across eye;



— Jordan and Richardson, Mem. Carnegie Mus., vol. 4, p. 178, 1909 (Keelung, Formosa).

— Seale, Philippine Journ. Sci., vol. 10, p. 62, 1914 (Hong Kong).

— Bean and Weed, Proc. U. S. Nat. Mus., vol. 42, p. 600, Aug. 30, 1912 (Batavia).

— Weber, Siboga Exped., vol. 57, Fische, p. 394, 1913 (Ceram; Solor; Postillon Islands).

— McCulloch, Biol. Res. Endeavour, vol. 3, pt. 3, p. 136, April 21, 1915 (11 to 14 miles N. 59° W. of Pine Peak, Queensland, 24 to 26 fathoms).

— Fowler and Bean, Proc. U. S. Nat. Mus., vol. 62, art. 2, p. 20, 1922 (Talsao, Padang material).



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1908. Length 28 mm.

[D. 5360]. Corregidor Light,  $N. 74^{\circ} W.$ ,  
6.9 miles ( $14^{\circ} 21' N.$ ,  $120^{\circ} 41' E.$ ), Luzon.

In 12 fathoms. February 8, 1909. Length 46 to  
71 mm. 13 examples.

[D. 5361]. Corregidor Light,  $S. 89^{\circ} W.$ , 7.2  
miles ( $14^{\circ} 24' 15'' N.$ ,  $120^{\circ} 41' 30'' E.$ ),  
Luzon. In 12 fathoms. February 9, 1909.  
Length 54 to 78 mm. 6 examples.

2 examples. Hinunangan Bay, Leyte.  
July 30, 1909. Length 31 to 34 mm.

6949. Iloilo market. May 31, 1908.  
Length 75 mm.

[D. 5131]. Island off Panabutan Point,  
 $N. 20^{\circ} E.$ , 0.04 mile, Sulu Sea, off western  
Mindanao. In 27 fathoms. February 6, 1908.  
Length 25 to 90 mm. 44 examples.

[D. 5640]. Labuan Blanda Island,  
 $N. 88^{\circ} E.$  1 mile ( $4^{\circ} 27' 00'' S.$ ,  $122^{\circ} 55' 40'' E.$ ),  
Buntan Strait. In 24 fathoms.



— Vinciguerra, Atti Mus. Civ. Stor.  
Nat. Genova, ser. 3, vol. 10, p. 562,  
1926 (Sarawak).

— Barnard, Ann. South African  
Mus., vol. 21, pt. 2, p. 541, Oct. 1927  
(compiled).

— McCulloch, Austral. Mus. Mem.,  
no. 5, pt. 2, p. 187, Sep. 10, 1929 (reference).



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Following McCulloch we place Lipogon  
monogramma Günther as a synonym,  
as the former says "only one lateral  
band is mentioned in its description,  
but the figure shows two, and some  
specimens in my series tally very well  
with the illustration." He also places  
Lipogon biensis Jordan and Snyder as  
another synonym. We place Amia  
elizabethae Jordan and Seale and  
Lipogon quingestriatus Regan as  
still other synonyms.



Caranx (Carangoides) malabaricus  
Klunzinger, Fische Roth, Meer,  
vol. 1, p. 99, 1884.

— Weber and Beaufort, Fish. Indo-  
Austral. Archip., vol. 6, p. 237, fig. 47,  
1931 (Batavia; Tandjong Priok;  
Portillon Islands; Solor; Lamblen;  
Ceram).

Caranx (Citula) malabaricus Wakiya,  
Ann. Carnegie Mus., vol. 15, p. 178,  
pl. 23, fig. 3, 1924 (Formosa).



Persian Gulf, Mozambique, Reunion,  
Maldives, India, Goksin, East Indies,  
Philippines, Formosa, China, Japan,  
Australia.



~~Carangoides malabaricus (Schneider)~~

~~Scomber malabaricus Schneider,~~

~~Syst. Ichth. Bloch, p. 31, 1801~~

~~(type locality, Tranquebar).~~

Carangoides malabaricus Bleeker,  
Nat. Tijds. Ned. Indie, vol. 13, p.  
384, 1857 (Batjan); vol. 15, p. 242,  
1858 (Singapore); vol. 16, p. 407,  
1858 (Japara, Java).



22567. Malcochin Harbor, Linapacan Island. December 19, 1908. Length 69 mm.

21611. Matnog Bay. May 31, 1909. Length 103 mm.

20442 to 20444. Noto River, Luzon. June 19, 1909. Length 98 to 106 mm.

19476 and 19477. Port Caltom, Pangauron River. December 16, 1908. Length  
65 to 185 mm.

6348. Port Jamelo. July 13, 1908. Length 204 mm. Olive and dusky above,  
pale below. Cheek and preorbitals with dusky. Side more or less washed  
with yellow. Vertical fins slightly marked with crimson on membranes.  
Ventral fins dusky. Pectoral brassy.

7076. Port San Pio, Quinto. November 11, 1908. Length 303 mm. Dark oliva-  
ceous, paler below. Side of head with blackish speckling, also little  
on side of body. Inside mouth scarlet. Fins slightly reddish or orange  
terminally. Pectoral scarlet in upper base and in axil. Scarlet blotch  
on gill opening under point of pectoral.

8979. Rapurapu Island. June 22, 1909. Length 680 mm.

8902. Rasa Island, Lagonoy Gulf. June 17, 1909. Head and part of trunk;  
head 195 mm. long.

22291. River at Port Dupon, Leyte. March 17, 1909. Length 115 mm.

18620, 18623 [1285]. Saboon Island, Ragay Gulf, Luzon. March 10, 1909.

Length 140 to 168 mm. Olive and silvery gray, olive forming oblique  
streaks on side of head, more or less parallel to upper contour; on sides  
as irregular blotched bars more or less connected as network. Vertical  
fins very pale olive; dorsal more or less blotched with translucent red-  
dish, becoming quite bright on tips of hind spinous rays; anal yellow-  
ish with paler blotches; caudal olive, with vermilion shades at edge in  
fork. Pectorals very pale clear yellow. Ventrals white externally, in-  
ternally olive. No red about gill opening. Roof of mouth inside post-  
eriorly red.



— Fowler, Journ. Acad. Nat. Sci.  
Philadelphia, ser. 2, vol. 12, p. 512,  
1904 (Padang, Sumatra); Proc.  
Acad. Nat. Sci. Philadelphia,  
1905 (April 7), p. 83 (Padang  
example).

— Oshima, Philippine Journ. Sci., vol.  
26, no. 3, p. 390, March 1925 (Anpin  
and Taihoku).



Velenciennes says of Lethrinus olivaceus: "the spinous dorsal is yellowish, edged orange, with golden yellow spots and large olive spots at the base of each spine. Soft dorsal membrane golden, also same of pectoral and caudal. Rays of these fins yellow. Anal and ventral yellowish."

1 example. Atulayan Bay, Luzon. June 17, 1909. Length, 83 mm.

8647. Biri Channel. June 22, 1909. Length, 544 mm.

15274. Canmahala Bay, Ragay Gulf, Luzon. March 11, 1909. Length, 240 mm.

5543. Cataingan, Masbate. April 18, 1908. Length, 233 mm. Back dark olive

green. Top of head more or less slaty, sides and lower portions paler. Centers of scales light, edges forming color, except on upper side where scale centers irregularly blue and on middle of side borders of scales with brownish tinge, forming more or less ill-defined stripes. Side of head with under shades; blue stripe from eye to front nostril; bluish under eye carried downward across front of cheek to mouth corner as slaty stripe; similar stripe across preorbital parallel. Vertical fins olive green, reddish terminally on membranes. Caudal with obscure reddish bars irregular. Pectoral hyaline straw, first or uppermost ray blue. Ventral olive, front edge bluish.

5552. Cataingan. April 19, 1908. Length, 265 mm.

5164 and 5165. Iloilo market. June 1, 1908. Length, 198 to 218 mm.

21163. Jolo market. February 11, 1908. Length, 80 mm.?

5963. Little Santa Cruz Island. May 26, 1908. Length 686 mm. Olivaceous

above, whitish below, margins of scales darkest. Maxillary and pre-maxillary membranes scarlet. Inside mouth posteriorly scarlet. Membrane of soft dorsal reddish. Anal less so. Slight reddish tinge on caudal tips.

8508. Makesi Island, Palawan. April 5, 1909. Length, 280 mm.



— Fowler, Journ. Bombay Nat. Hist.  
Soc., vol. 30, no. 4, p. 6, <sup>Nov.</sup> 1926  
 (Bombay); Proc. Acad. Nat. Sci.  
Philadelphia, vol. 79, 1927, p.  
 272 (Orion; Philippines; San  
 Fabian example); Journ. Bombay  
Nat. Hist. Soc., vol. 33, no. 1,  
 p. 110, September 30, 1928 (Bombay);  
Proc. Acad. Nat. Sci. Philadelphia,  
 vol. 86, 1934, p. 447 (Durban,  
 Natal); vol. 87, p. 141, 1935 (Bangkok).  
 { vol. 81, 1929, p. 606 (Hong Kong); Hong Kong  
Naturalist, vol. 2, no. 4, p. 293, November  
 1931 (Hong Kong); Proc. Acad. Nat. Sci.  
Philadelphia,

Carangoides malabaricus Fowler,  
Proc. Acad. Nat. Sci. Philadelphia,  
 vol. 77, 1925, p. 216 (Delagoa Bay; Natal)  
 (error).



134789

26

Depth  $2\frac{2}{3}$  to  $3\frac{1}{4}$ ; head  $2\frac{2}{5}$  to  $2\frac{3}{4}$ , width  $2\frac{2}{5}$  to 3. Snout  $1\frac{3}{5}$  to  $3\frac{3}{4}$  in head; eye  $3\frac{2}{5}$  to  $7\frac{2}{3}$ ,  $1\frac{1}{2}$  to  $4\frac{3}{4}$  in snout, greater than inter-orbital in young to 1 to 2 with age; maxillary reaches  $1\frac{1}{2}$  to  $2\frac{2}{3}$  to eye, not to front nostril, length  $2\frac{3}{4}$  to 3 in head; lips broad, fleshy, coriaceous; teeth in broad villiform bands anteriorly in jaws, outer row enlarged and conic with 4 front ones in each jaw slight canines, all laterals strongly conic, interorbital 4 to  $5\frac{1}{8}$  in head, broadly and slightly convex in young, nearly level to slightly concave with age; naked region of head with fine striae or skin finely rugose. Gill rakers 4 + 5, short low tubercles, about  $1\frac{1}{2}$  of gill filaments.

Scales 44 to 48 in lateral line to caudal base and 1 or 2 more on latter; 6 above, 15 or 16 below, 9 predorsal; caudal and pectoral bases finely scaled. Scales with 12 to 18 basal radiating striae, with 2 to 23 incomplete auxiliaries; 110 to 244 apical denticles, with 5 to 8 transverse series of basal elements; circuli fine;

D. I, 9, I, fourth spine  $2\frac{4}{5}$  to  $3\frac{1}{4}$  in head, fourth ray 3 to  $3\frac{1}{5}$ ; A. III, 8, I, third spine  $3\frac{1}{2}$  to  $4\frac{1}{8}$ , first ray  $3\frac{1}{5}$  to  $3\frac{2}{3}$ ; caudal  $1\frac{1}{4}$  to  $1\frac{2}{5}$ , deeply emarginate; least depth of caudal peduncle  $3\frac{3}{5}$  to  $3\frac{7}{8}$ ; pectoral  $1\frac{2}{5}$  to  $1\frac{3}{5}$ ; ventral  $1\frac{2}{3}$  to  $1\frac{3}{4}$ .

Brown generally, paler to whitish below. Head deeper or drab-brown, pale below. Each scale on body with slightly darker margin. Iris golden brown. Fins brown, vertical ones mottled or obscurely spotted with deeper brown.

Red Sea, Zanzibar, Mozambique, Portuguese East Africa, Natal, Madagascar, India, Ceylon, East Indies, Philippines, China, Hia Kiu, Melanesia, Micronesia, Polynesia. Easily known among all the species of its genus by its very long attenuated snout, broad lips and conic teeth. Moreover, it reaches a large size, Klunzinger giving 820 mm. as maximum length.



Citula malabarica Bleeker, Ned.

Tijds. Dierk., vol. 2, p. 34, 1865

(Siam), p. 174 (reference); Rech.

Faun. Madagascar, pt. 4, p. 99, 1874

(reference).



12459. Bugsuk Island, north  
Balabac Strait. January 5, 1909.

Length 129 mm.

23572. Busin Harbor, Burias Island.  
April 22, 1908. Length 149 mm.

14544 to 14549, 15517, 17187 to 17189,  
22280, 23434. Butuanan Island,  
east coast Luzon. June 13, 1909. Length 90  
to 143 mm.

14242, 14244, 17418. Candaraman Island,  
Balabac Strait. January 4, 1909.  
Length 112 to 131 mm.

15079. Capulaan Bay, Paybilao, Chica  
Island, vicinity Mainague. February  
24, 1909. Length 141 mm.

16709, 21046 and 21047. Capunuyegan,  
Generale Island, east coast Mindanao.  
May 9, 1908. Length 105 to 125 mm.

1 example. Capunuyegan. May 10, 1908.  
Length 118 mm.



Carangoides telamparah Bleeker,  
 Verh. Batavia. Genoot. (makreel),  
 vol. 24, p. 64, 1852 (type locality,  
 Batavia); Nat. Tijds. Ned. Indie,  
 vol. 3, p. 740, 1852 (Macassar);  
 Verh. Batavia. Genoots. (hal.  
 Ichth. Bengal), vol. 25, p. 46, 1853  
 (reference); Nat. Tijds. Ned.  
 Indie, vol. 7, p. 312, 1854 (Bantem).

Carangoides telamparah Bleeker,  
 Act. Soc. Sci. Ind. Neerl., vol. 1, no. 3,  
 p. 8, 1856 (Macassar).



no dips

16 lines

q<sup>1</sup>. Each scale of body with white,  
golden or dark spot.

17 lines

r<sup>1</sup>. Depth  $2\frac{1}{4}$  to  $2\frac{2}{5}$  . . . . . haematopterus

r<sup>2</sup>. Depth  $2\frac{3}{5}$  . . . . . choerorhynchus

r<sup>3</sup>. Depth  $2\frac{2}{3}$  . . . . . mahsenoides

16 lines

q<sup>2</sup>. Each scale of back with black  
vertical basal streak; depth

$2\frac{1}{2}$  . . . . . chrysostomus

15 lines

p<sup>2</sup>. Body with longitudinal bands, some-  
times made up of spots.

18 lines

s<sup>1</sup>. Axial pale longitudinal  
band, another parallel  
below . . . . . ranak

18 lines

s<sup>2</sup>. Five or 6 reddish or  
yellow longitudinal  
lateral bands . . . . . erythrurus

18 lines

s<sup>3</sup>. Three blue-violet paral-  
lel bands above lateral  
line, below each scale  
row with longitudinal  
brown line . . . . . striatus

18 lines

s<sup>4</sup>. Each scale of body with  
dark spot, forming longi-  
tudinal series . . . . . croceopterus

14 lines

o<sup>2</sup>. Head darker or greatly contrasted with  
body.



Carangoides telamiparoides Bleeker,  
 Nat. Tijds. Ned. Indië, vol. 3,  
 p. 579, 1852 (type locality, Sibogha);  
 Verh. Batavia. Genoot. (makreel),  
 vol. 24, p. 91, 1852 (Sibogha).

Caranx telamiparoides Günther,  
 Cat. Fish. Brit. Mus., vol. 2, p. 437,  
 1860 (on Bleeker) — Klunzinger,  
 Verh. zool. bot. Gesell. Wien, vol.  
 21, p. 463, 1871 (Red Sea) —  
Martens, Preuss. Exped. Ost Asien,  
 vol. 1, p. 391, 1876 (Bangkok).



Follow—Incl Caps

8 pt. Leaded

10

134733

21

6ems

g<sup>2</sup>.

Usually more or less complete median whitish axial line and several others above and below . . . . .

kallopterus

1110

f<sup>2</sup>.

Dark lateral blotch fading with age; each scale with white spot . . . . .

nebulosus

1110

e<sup>2</sup>.

Dark vertical band on cheek; body rather slender.

8ems

i<sup>1</sup>.

Dark vertical band on cheek . . . . .

variegatus

i<sup>2</sup>.

Broad dark vertical band on cheek; another on preopercle . . . . .

genivittatus

0

c<sup>2</sup>.

No black lateral blotch on body.

9ems

j<sup>1</sup>.

Second dorsal spine not longer than others.

10ems

k<sup>1</sup>.

No black spot on temple.

11ems

l<sup>1</sup>.

Snout moderate.

12ems

m<sup>1</sup>.

No bluish streaks before eye.

13ems

n<sup>1</sup>.

No oblique green bands on cheek.

14ems

o<sup>1</sup>.

Head not darker, nor greatly contrasted with body.

15ems

p<sup>1</sup>.

No longitudinal bands on body; anal longer than high; 5 scales above lateral line.



Caranx (Carangoides) impudicus  
Klunzinger, Fische Roth. Meer.,  
vol. 1, p. 99, 1884 (on Klunzinger 1871).

Carangoides gibber Fowler, Journ.  
Acad. Nat. Sci. Philadelphia, ser.  
2, vol. 12, p. 512, pl. 15 upper figure  
to left, June 10, 1904 (type locality,  
Padang, Sumatra).



to caudal base medianly and out  
over median caudal rays. Another  
narrower dark brown band parallel  
above, begins near end of snout above  
nostrils, runs over eye and along back  
above toward upper edge of caudal fin.  
In youngest examples narrow dark brown  
median line from interorbital nearly to  
spinous dorsal and from each side of  
occiput, above second dark lateral band,  
a third dark band or line close along  
base of spinous dorsal to soft dorsal.  
Iris pale or whitish, except as crossed  
by lowest dark longitudinal band.  
Fins all more or less pale, spinous  
dorsal grayish terminally, soft dorsal  
and anal each with subbasal gray brown  
longitudinal band, also ventral broadly  
grayish brown over anterior half of fin.



Caranx altissimus Jordan and Seale,  
Proc. Davenport Acad. Sci., vol. 10,  
May 22, 1905, p. 7, pl. 3 (type locality,  
Hong Kong). — McCulloch, Austral.  
Mus. Mem., no. 5, pt. 1, p. 187, Sep.  
10, 1929 (reference).

Biol. Res. Endeavour, vol. 3, pt. 3, p.  
134, pl. 24, April 21, 1915 (Southern  
Queensland; Manila).



Leaded  
Follow - Inc. Caps

134788

273

Sparus castelnaui (Bleeker) - 8 p. cr.

Pagrichthys castelnaui BLEEKER, Nat. Tijds. Nederland. Indië, vol. 21,  
1860, p. (50, 52) 61, (Cape of Good Hope).

Depth 4 in total; head  $4\frac{1}{3}$ . Eye  $3\frac{1}{2}$  in head. Scales 40 in lateral line. D. XI, 10 or 11. A. II, 8 or 9. Caudal I, 15, I. Pectoral II, 14. Ventral I, 5. Rosy. Length, 190 mm. (Bleeker.)

Sparus fascialis (Castelnaui) - cr

Pogellus fascialis CASTELNAU, Mém. Poiss. Afrique Australe, 1861, p. 28.  
(Algoa Bay).

Body ovoid, elevated in front. Head hunched above eyes. Mouth advanced as in Pogellus lithognathus. Upper outer teeth conic, pointed, equal row, inner numerous mass, small and granular; lower teeth similar, in front 2 very strong canines. D. XII, 10. A. III, 8. Caudal 20. Pectoral 16. Ventral I, 5. Back violet brown, with numerous oblique deep colored lines. Below rose white with traces of yellowish lines. On flanks score are each posteriorly with transverse brown line. Front of head green, with blue streaks before eyes. Mouth flesh color, edged violet above. Fins yellowish green. Pectoral yellow, bordered orange. Ventrals orange, ends red. Iris white. Length, 480 mm. (Castelnaui.)

Barnard thinks it suggests a Lethrinus except for the fin formula.



Caranx armatus (not Forsskal)  
Evermann and Seale, Bull. Bur.  
Fishes, vol. 26, p. 65, 1906, (~~For~~  
~~Labridae~~ example) (Jan. 11, 1907)  
Bulan



7677. Agojo Point, Catanduanes  
Island, east coast Luzon. June  
10, 1909. Length 135 mm.

16287 and 16288. Allibijaban Island,  
Ragay Gulf, Luzon. March 6, 1909.  
Length 130 to 131 mm.

11286, 13718, 16010. Alimango Bay,  
Burias Island. March 5, 1909.  
Length 103 to 131 mm.

15263. Itulayan Island, east coast  
of Luzon. June 18, 1909. Length 136 mm.

14909. Biri Channel, east coast  
Luzon. June 2, 1909. Length 136 mm.

14654, 23240 to 23244. Bolalo Bay,  
Palawan Island. December 21, 1908.  
Length 87 to 140 mm.

8874 and 8876. Buang Bay, Talajit  
Island, between Samar and Masbate.  
March 15, 1909. Length 110 to 164 mm.



Depth 2 to  $3\frac{1}{8}$ ; head  $3\frac{1}{10}$  to  $3\frac{1}{3}$ , width  $2\frac{1}{2}$  to  $2\frac{3}{5}$ . Snout  $2\frac{1}{2}$  to  $3\frac{1}{8}$  in head from snout tip; eye  $2\frac{4}{5}$  to 4,  $1\frac{1}{5}$  to  $1\frac{3}{5}$  in snout,  $1\frac{1}{6}$  to  $1\frac{1}{5}$  in interorbital, adipose lids narrow; maxillary reaches eye or  $\frac{1}{5}$  in eye, expansion  $1\frac{2}{3}$  to 2 in eye, length  $2\frac{1}{3}$  to  $2\frac{3}{4}$  in head from snout tip; interorbital  $3\frac{4}{5}$  to 4, convexly elevated. Gill rakers 9 to 11 + 22 to 24, lanceolate; gill filaments  $\frac{4}{5}$  of gill rakers or  $1\frac{1}{3}$  in eye.

Scales 60 to 65 + 30 to 40 in lateral line, arch  $1\frac{1}{2}$  in straight section; scute depth 6 in eye; 23 or 24 scales above lateral line, 48 or 49 below. Breast



far up as pectoral base and  
far back as vent naked.

Scales with 12 to 30 circuli.

D. I, VIII - I, 22, I, third  
spine  $2\frac{2}{3}$  to  $2\frac{4}{5}$  in total head  
length, first ray  $1\frac{3}{7}$  to  $1\frac{4}{5}$ ; A.  
II - I, 18, I or I, 19, I, first ray  
 $1\frac{7}{8}$  to 2; caudal  $1\frac{1}{8}$  to  $1\frac{1}{5}$ ,  
forked; ventral  $2\frac{1}{3}$  to  $2\frac{2}{5}$ ;  
pectoral  $2\frac{3}{4}$  to  $2\frac{7}{8}$  in fish  
without caudal, reaches  
straight section of lateral  
line, rays II, 17.

Back drab or brown, sides  
and below silvery white.  
Upper hind opercle edge <sup>with</sup> dark  
gray to dusky spot, equals  
size of pupil. Fins pale brown,  
lower ones whitish.



1854

Red Sea, Natal, India, East  
Indies, Philippines, Formosa,  
China.



One example. Balayan Bay, Luzon.  
 January 19, 1908. Length 108 mm.  
 Lower gill rakers 25. A. II - I, 18.  
 Ventral ends dusky. Three transverse  
 C-shaped gray bands on side.

Eight examples. Catbalogan, Samar  
 (taken from a jelly fish). April  
 16, 1908. Length 50 to 81 mm. Depth  
 $1\frac{2}{3}$ . Lower gill rakers 23. A. II -  
I, 18.

One example. Cavite (with  
 medusa). January 11, 1909. Length  
 25 mm.

126 examples. Cebu Harbor.  
 Length 28 to 68 mm. Lower gill rakers  
 25 or 26. A. II - I, 17 or 18. Ventral  
 ends dusky in very young.

9367. Cebu market. August  
 27, 1909. Length 255 mm.



1575-  
Corvina wolffii Bleeker, Natuurk.  
Tijdschr. Nederland. Indie, vol. 2, 1851,  
p. 66. Bandjermassing, in rivers.

Corvina sampitensis Bleeker, Natuurk.

Tijdschr. Nederland. Indie, vol. 3, 1852,  
p. 421. Sampit, South Borneo.

Corvina celebica Bleeker, Natuurk. Tijdschr.  
Nederland. Indie, vol. 7, 1854, p. 244.

Macassar, Celebes.

Corvina dorsalis Peters, Archiv Naturgesch.,  
vol. 21, pt. 1, 1855, p. 242. Quilimane,

Mozambique.  $\frac{1}{2}$  Sauvage, Hist. Nat.

Madagascar, 1891, p. 350, pl. 17, fig. 3-3a.

Sciaena mulleri Steindachner, Denkschr.

Abad. Wiss. Wien, math.-naturw. Klasse,

vol. 41, pt. 1, 1879, p. 1. Cleveland Bay at  
Townsville, Queensland.

Sciaena (Corvina) mulleri Klunzinger, Sitz.

Ber. Abad. Wiss. Wien, math.-naturw. Klasse,

vol. 80, pt. 1, 1878, p. 372 (Queensland).



2642. D. 5361. Corregidor Light,  
S.  $89^{\circ}$  W., 7.2 miles (lat.  $14^{\circ}24'15''$   
N., long.  $120^{\circ}41'30''$  E.), Manila  
Bay. In 12 fathoms. February 8,  
1909. Length 122 mm. Lower gill  
rakers 24. A. II - I, 18.

One example. Jolo. February 14,  
1908. Length 24 mm.

One example. Jolo. March 5, 1908.  
Length 15 mm.

21 examples. Lundi Landing,  
Manila Bay. January 24, 1908.  
Length 32 to 48 mm. Lower gill  
rakers 25. A. II - I, 17 or 18.

17523. Lampinigan Island,  
south of Zamboanga. September 11,  
1909. Length 138 mm. Lower gill  
rakers 24. A. II - I, 19.

One example. Manila anchorage  
(from large medusa). January 31,  
1908. Length 55 mm. Lower gill  
rakers 25. A. II - I, 17.



Sciaena (Corvina) miles Klunzinger, Sitz.  
Ber. Akad. Wiss. Wien, math.-naturw.  
Klasse, vol. 80, pt. 1, 1879, p. 372 (Queensland).  
Johnius miles Bleeker, Verslagen Meded.  
Kon. Akad. Wetensch. Amsterdam, vol.  
12, 1861, p. 73 (Pinang). <sup>L</sup><sub>m</sub> Fowler, Journ.  
Bombay Nat. Hist. Soc., vol. 30, no. 2, June  
25, 1925, p. 320 (Bombay); vol. 32, no. 2,  
October 20, 1927, p. 260 (Bombay).

Pseudosciaena miles Bleeker, Verhandel.  
Kon. Akad. Wetensch. Amsterdam, ~~series~~ <sup>3</sup>,  
vol. 14, 1874, p. 25 (Pinang, Banka, Java,  
Borneo, Celebes); Atlas Ichth. Ind.  
Néerland., vol. 1, 1877, pl. (2) 385, fig. 3.

Sciaena argentea (not Forsk. 1775) (Kuhl  
and van Hasselt) Cuvier, Hist. Nat. Poiss.,  
vol. 5, 1830, p. 71. Java. (name in text.)

Corvina argentea Macleay, Proc. Linn. Soc.  
New South Wales, vol. 8, 1883, p. 204 (Lake  
Burdakin River, Queensland).



One example. Manila (from  
blue spotted fish). April 29, 1908.  
Lower gill rakers 24. A. II - I, 17.

20787. Manila market.  
December 12, 1907. Length 98 mm.  
Lower gill rakers 21. A. II - I, 18.  
11598. Manila market.

March 16, 1908. Length 65 mm.  
Lower gill rakers 24. A. II - I, 18.  
Depth  $1\frac{3}{4}$ . Ventrals dusky terminally.

One example. Mansalay,  
Mindoro. June 4, 1908. Lower gill  
rakers 23. A. II - I, 17. Length 86 mm.

7886. Mariveles Bay. January  
29, 1909. Length 290 mm.

7904. Off <sup>La</sup> Morja Island, Manila Bay.  
February 7, 1909. Length 170 to 258  
mm. Two examples.

5371. Oton market, Iloilo.  
March 30, 1908. Length 94 mm.  
Lower gill rakers 26. A. II - I, 17.



- Mus., vol. 2, 1860, p. 300 (Ceylon and  
 Malay Peninsula).  $\frac{1}{21}$  Mackenz, Proc.  
 Linn. Soc. New South Wales, vol. 9, 1884, p.  
 23 (copied Klunzinger).  $\frac{1}{21}$  Elera, Cat.  
 Fauna Filipinas, vol. 1, 1895, p. 502 (Luzon;  
 Manila Bay).  
Sciaenoides miles Cuvier, Hist. nat. Poiss., vol.  
 5, 1830, p. 94 (Pondichery; Java).  $\frac{1}{21}$  Vilenciennes,  
 Hist. nat. Poiss., vol. 9, 1833, p. 479 (note).  
 $\frac{1}{21}$  Jouan, Mém. Soc. Hist. nat. Cherbourg,  
 series 2, vol. 3, 1868, p. 254 (Hong Kong).  $\frac{1}{21}$   
 Day, Fishes of India, pt. 2, 1876, p. 185, pl.  
 43, fig. 5 (Bombay); Fauna British India,  
 Fishes, vol. 2, 1889, p. 11.  $\frac{1}{21}$  Pellegrin, Bull. Soc.  
 Zool. France, vol. 30, 1905, p. 84 (Baie de  
 ulong, Tonkin).  $\frac{1}{21}$  Lloyd, Records Indian  
 Museum, vol. 1, 1907, p. 226 (Ukayab).  $\frac{1}{21}$   
Tirant, Service Pêche Indochine, Pêch. Indo  
 Chine, 1927, note 6, p. 167 (Haïgon).



17545. Sorogon Market.  
 March 12, 1909. Length 133 mm.  
 Lower gill rakers 21. A. II - I, 18.

Two examples. Teamabal  
 Island (NW.), S.  $36^{\circ}$  W., 0.2 mile  
 (lat.  $5^{\circ}50'45''$  N., long.  $121^{\circ}01'15''$   
 E.), vicinity Jolo Island.  
 In 10 fathoms. September 18, 1909.  
 Length 18 to 20 mm.

5 examples. Birabirahan Island  
 Borneo (with jelly fish). December  
 31, 1909. Length 16 to 33 mm.  
 Lower gill rakers 23. A. II - I, 17.



Cuv 129

Johnius soldado (Lacépède)

Holocentrus soldado Lacépède, Hist. nat. Poiss., vol. 4, 1802, pp. 344, 387. "Cayenne."

Corvina soldado Cantor, Journ. Asiatic Soc. Bengal, vol. 18, pt. 2, 1849, p. 1052 (Pinang).

Corvina solada Mason, Burmah Nat. Resources, 1860, p. 695. (Error).

Sciæna soldado Ogilby, Mem. Queensland Mus., vol. 6, December 11, 1918, p. 81, pl. 24 (Dunk Island; type of Corvina argentea macleay). <sup>L</sup><sub>m</sub> Barnard, Ann. South African Mus., vol. 21, pt. 2, October 1927, p. 570 (Quilimane, Portuguese East Africa).

Corvina miles Cuvier, Règne Animal, ed. 2, vol. 2, 1827, p. 173 (on Tella

katcheke Russell, Fishes of Coromandel, vol. 2, 1803, p. 13, pl. 117. (Vizagapatam). <sup>L</sup><sub>m</sub>

Jerdon, Madras Journ. Literat. Science, 1851, p. 131. <sup>L</sup><sub>m</sub> Günther, Cat. Fishes Brit.



U. S. N. M., No. 56093. <sup>Buahan,</sup> Luzon. 1859

Bureau of Fisheries (4032). Length  
74 mm. Lower gill rakers 26.  
A. I, 18. As Caranx armatus.

U. S. N. M., No. 76613. Formosa.  
Dr. Fred Baker. Length 152 to  
178 mm. Three examples.



Genus Boopsoidea Castelnau-----

Genus Evynnis Jordan and Thompson-----

Genus Pagellus Cuvier-----

Genus Diplodus Rafinesque-----

Subgenus Diplodus Rafinesque-----

Rhabdosargus, new subgenus-----

Genus Puntazzo Bleeker-----

Genus Boops Cuvier-----

Genus Sarpa Bonaparte-----

Genus Spondyllosoma Cantor-----

Subgenus Spondyllosoma Cantor-----

Simacanthorus, new subgenus-----

Genus Gymnocrotaphus Günther-----

Girellidae-----

Genus Girella Gray-----

Genus Tephraeops Günther-----

Genus Melambophes Günther-----

Genus Proteracanthus Günther-----

Genus Crenidens Valenciennes-----

Genus Tripteronodon Playfair-----

Kyphosidae-----

Genus Kyphosus Lacépède-----

Genus Pachymetopon Günther-----

Genus Sectator Jordan and Fesler-----

Genus Coracinus Gronow-----



A. n. S. P., one example. Natal.  
1922. H. W. Bell Marley.

A. n. S. P., one example. Delagoa  
Bay, Portuguese East Africa.  
1922. H. W. Bell Marley.

A. n. S. P., three examples.  
Bombay. 1925. Dr. F. Hallberg.  
Purchased. Length 117 to 198 mm.

A. n. S. P., five examples.  
Bombay. 1925. Bombay Nat. Hist. Soc.  
Length 140 to 175 mm.



9 The following two species are quoted from McCulloch's  
Check List, 1929, as I am unable to consult the originals:

LETHRINUS CINNABARINUS Richardson ✓

11 Lethrinus? cinnabarinus Richardson, Icon. Pisc., p. 8, pl. 4,  
① fig. 2, 1843 (Houtman's Abrolhos, Western Australia).  
type locality:

LETHRINUS CYANOXANTHUS Richardson ✓

12 Lethrinus? cyanoxanthus Richardson, Icon. Pisc., p. 7, pl. 4,  
① fig. 1, 1843 (Houtman's Abrolhos, Western Australia).  
type locality:

10pt 9 Saville-Kent has introduced the following nomina nuda:

LETHRINUS LACHRYMANS Saville-Kent

Lethrinus lachrymans Saville-Kent, Great Barrier Reef, p. 369,  
① 1893 (Queensland).  
type locality:

LETHRINUS MARGARITIFER Saville-Kent

Lethrinus margaritifer Saville-Kent, Great Barrier Reef, p. 369,  
① 1893 (Queensland).  
type locality:

LETHRINUS REGIUS Saville-Kent

Lethrinus regius Saville-Kent, Great Barrier Reef, p. 369, 1893  
① (Queensland).  
type locality:

LETHRINUS VIRIDIS Saville-Kent

Lethrinus viridis Saville-Kent, Great Barrier Reef, p. 369, 1893,  
① (Queensland).  
type locality: